BACKGROUND WATER QUALITY STATISTICAL CERTIFICATION

for Compliance with the Coal Combustion Residuals (CCR) Rule

Valmont Station

Public Service Company of Colorado

January 15, 2018

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Table of Abbreviations and Acronyms

Abbreviation	Definition
BDL	below detection limits
BTV	background threshold value
CCR	Coal Combustion Residuals
COI	constituent of interest
EDD	electronic data deliverable
EPA	Environmental Protection Agency
MDL	method detection limit
ND	non-detects
SOP	Standard Operating Procedure
SSI	statistically significant increase
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UPL	upper prediction limit

Certification

Background Water Quality Statistical Certification for Compliance with the Coal Combustion Residuals Rule

I hereby certify to the best of my knowledge that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area.

I am duly licensed Professional Engineer under the laws of the State of Colorado.

Matthew Rohr, PE

Colorado PE License 0053467

License renewal date October 31, 2019



1.0 Introduction

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Valmont Station, located in Boulder County, Colorado (**Figure 1**), has three existing CCR units subject to the CCR Rule: the ash landfill and two incised bottom ash impoundments (**Figure 2**). Part 257.93 of the Rule requires that a certification be obtained from a professional engineer describing the statistical method selected to evaluate the groundwater monitoring data at the facility.

The objective of this report is to document the selection of the statistical method for each Appendix III and IV constituent of interest (COI) for the multi-unit CCR facility. At Valmont, groundwater monitoring has been conducted to collect eight rounds of background sampling plus the initial detection monitoring (completed before October 17, 2017) as specified under CCR Rule Part 257.94. The water quality data collected from the monitoring well located upgradient of each CCR unit has been compiled and statistically analyzed to develop background threshold values (BTVs) for each COI for each CCR facility. The statistical method chosen to represent background water quality is the upper prediction limit (UPL) and is one of the methods described in the CCR Rule Part 257.93 (f)(3). This background water quality report documents the background sample events and describes the statistics performed to develop the BTVs.

2.0 Facility Description

Valmont Station is a coal-fired, steam turbine electric generating station that burned sub-bituminous, low-sulfur coal supplied by several mines in western Colorado. Valmont Station was retired from operations on September 30, 2017. During the active operations, two incised bottom ash impoundments (3A and 3B) were used for temporary storage of bottom ash prior to final disposition. During operations, the impoundments were periodically dredged and the bottom ash disposed in the on-site landfill. The impoundments are no longer receiving CCR waste and are scheduled to be closed in 2018. CCR waste removed during pond closure will be disposed in the on-site landfill, after which the landfill will be closed. The landfill is located adjacent to and north of Leggett Reservoir, and the impoundments are to the southeast of Leggett Reservoir (**Figure 2**). Fly ash was handled dry and trucked either off site for beneficial use, or to the on-site ash landfill. The CCR units operation and monitoring are described further in the Valmont Station Groundwater Monitoring System Certification (HDR, 2016).

2.1 2.1 Hydrogeology

2.1.1 Landfill

The ash landfill at Valmont Station is located on the flanks of Valmont Butte on Slocum Alluvium (gravels and cobbles) above the claystone bedrock Pierre Shale. The Pierre Shale is a sedimentary bedrock that is approximately 2,000 feet thick in this area. The unit consists of claystone with interbeds of siltstone and discontinuous cemented layers. The thickness of alluvium under the ash fill and over the bedrock varies from 0 to 10 feet. Due to the Pierre Shale thickness and low permeability, underlying formations do not receive significant recharge from above (Kumar and Associates, Inc., 2011). There is perched water beneath the landfill and coincident with the top of the Pierre Shale and the water surface of Leggett Reservoir. The shallow groundwater flow beneath the

landfill follows the topography and is generally to the south-southeast in the eastern portion and to the southwest at the western portion of the landfill (**Figure 2**), as compared with the regional, deeper water table that flows to the northwest (APEX, 2008; Xcel, 2009).

2.1.2 Impoundments

The groundwater levels in monitor wells around impoundments 3A and 3B coincide with the seasonal fluctuation of the water levels in Leggett Reservoir. The reservoir and the groundwater surface around the impoundments are perched above the Pierre Shale.

Further hydrogeologic characterization of the site is provided in the Valmont Station Groundwater Monitoring System Certification (HDR, 2016).

2.2 2.2 Monitoring Well Network

2.2.1 Landfill

A total of six monitoring wells were sited at the landfill for CCR compliance, one upgradient monitoring well (MW-7) and five downgradient monitoring wells (MW-1, MW-3, MW-4, MW-6, and MW-8) (**Figure 2**), as described in the Groundwater Monitoring System Certification report (HDR, 2016). Groundwater flows south under the landfill, therefore the MW-7 well location on the north side of the landfill was located to be upgradient of the landfill and water collected from this well has been compiled to develop the BTV for the landfill.

2.2.2 Impoundments

Five wells were sited at the impoundments for CCR compliance. The flow of groundwater in the immediate vicinity of the impoundments (3A and 3B) appears to be controlled by the water level in Leggett Reservoir, and may flow radially out from the impoundments. Therefore, four wells (MW-9, MW-10, MW-11, MW-12) comprising a multi-unit monitoring network were located along the perimeter of the impoundments to serve as downgradient wells (**Figure 2**). Each downgradient well is located at a corner of the waste boundary of the CCR units to ensure the water quality from these four locations will detect constituents from the CCR unit, if present. The fifth well, MW-1P was selected to serve as the background well based upon its location approximately 300 feet south of the impoundments and separation from the impoundments by Leggett Reservoir (**Figure 2**), as described in the Groundwater Monitoring System Certification report (HDR, 2016).

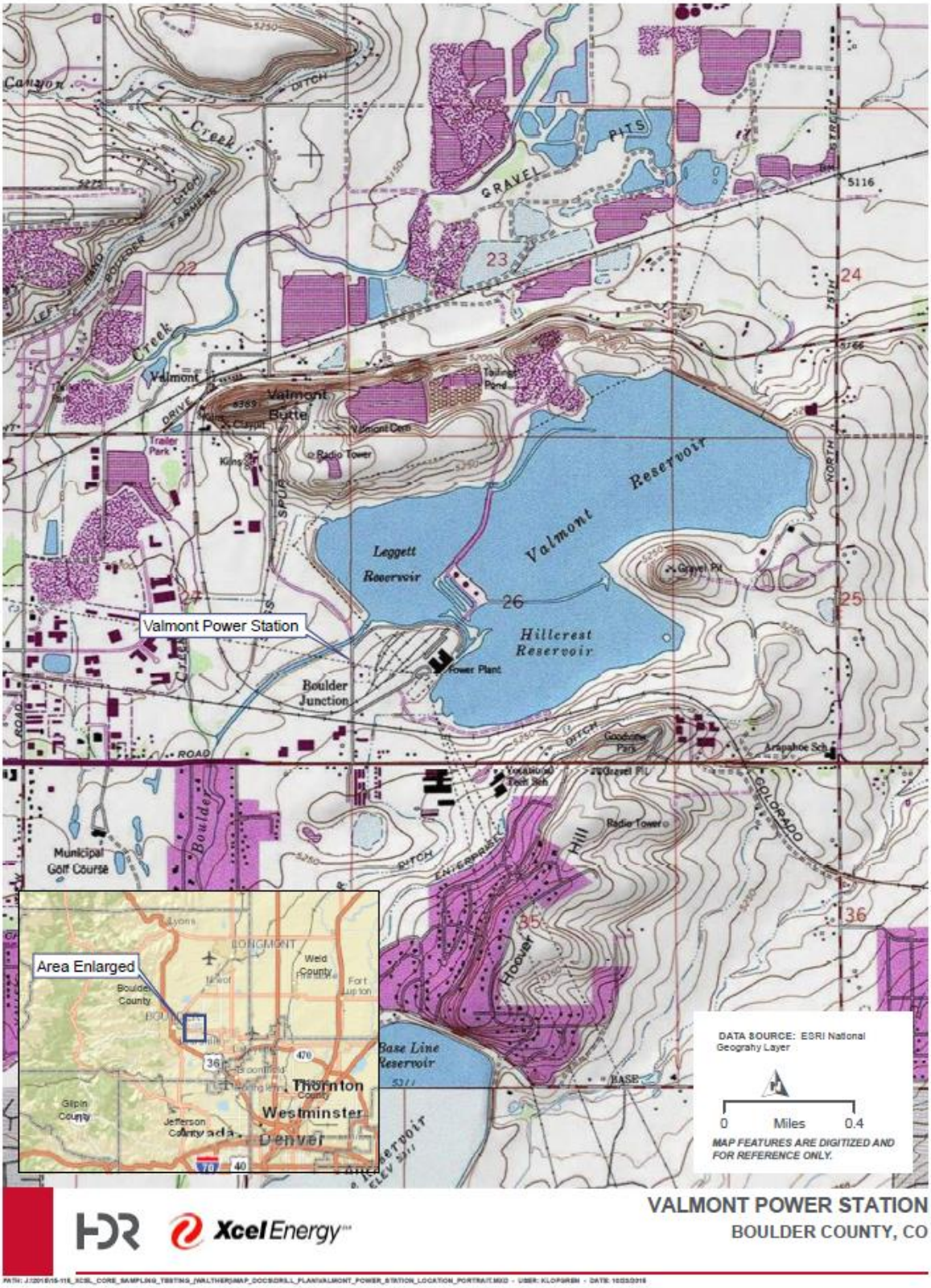

Figure 1. Vicinity map for Valmont Station.

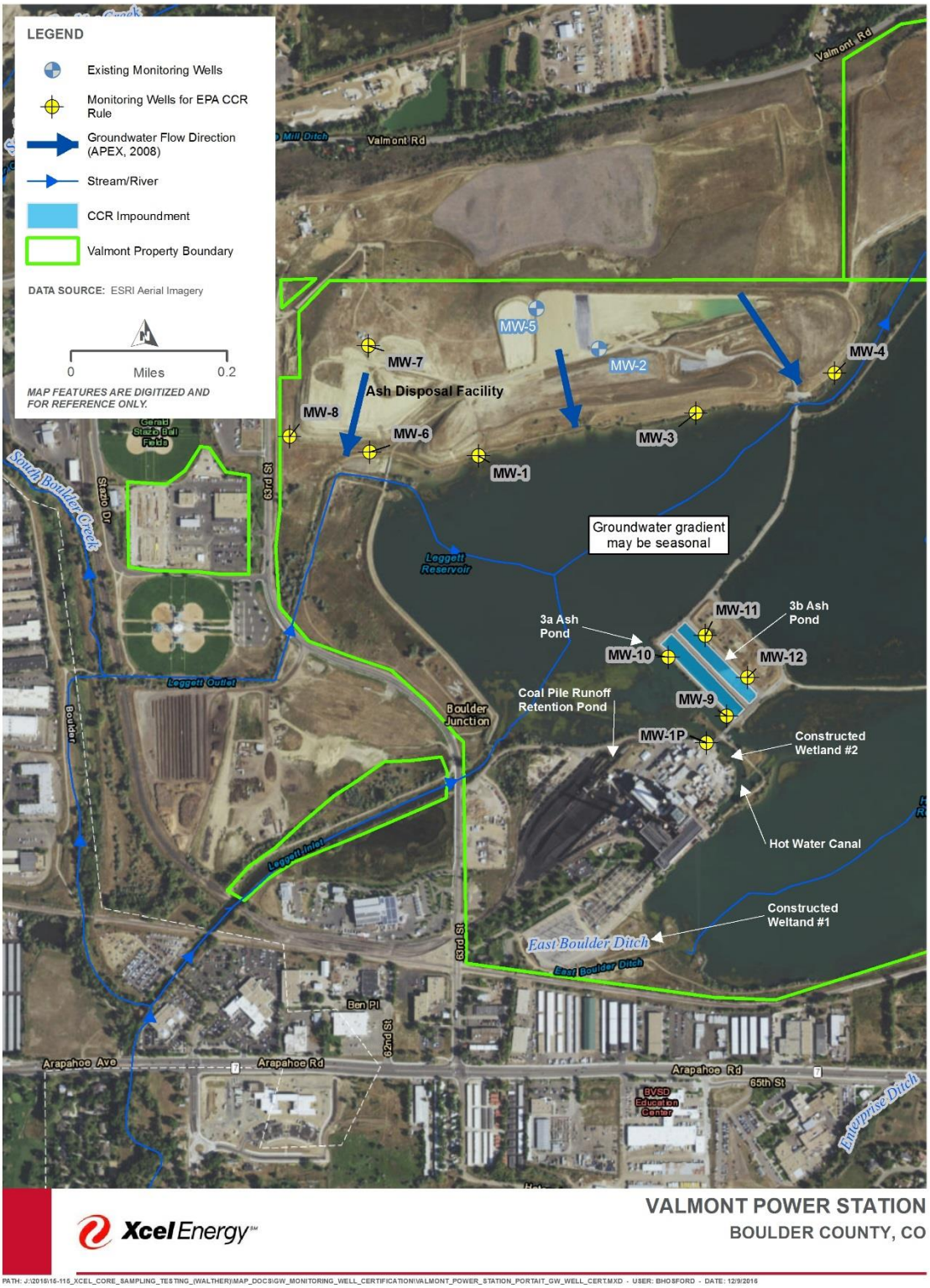

Figure 2. Valmont Station – CCR units and monitoring well location map.

3.0 Monitoring Methods

3.1 Monitoring Frequency

As stipulated in the CCR Rule, eight background groundwater sampling events were completed before October 17, 2017. The CCR groundwater sampling program for Valmont Station was conducted on a quarterly basis between fourth quarter 2015 and third quarter 2017. This Background Memorandum presents the results from the eight quarterly events, completed on the following dates:

- ✓ December 8-17, 2015
- ✓ March 4-10, 2016
- ✓ May 17-20, 2016
- ✓ August 25-30, 2016
- ✓ November 7-10, 2016
- ✓ February 27-March 2, 2017
- ✓ May 18-22, 2017
- ✓ July 10-13, 2017

3.2 Water Levels and Sample Collection

Water levels were recorded for each of the 11 monitoring wells and groundwater quality samples were collected from each of the upgradient wells at the landfill (MW-7) and the impoundments (MW-1P). Groundwater sample collection protocols followed the Groundwater Sample Collection Standard Operating Procedure (SOP) (HDR, 2015). The water samples were collected using a submersible Geotech SS Geosub pump, and the pump and hose were decontaminated between wells following protocols outlined in the Sampling SOP. Water samples were delivered under Chain of Custody to Test America in Denver, Colorado. Only the upgradient wells are discussed in this report, for development of BTVs. The downgradient wells will be discussed in the Annual Groundwater Monitoring and Corrective Action Reports (Annual Groundwater Reports).

3.3 Analytical Testing

Groundwater samples were analyzed for the parameters shown in **Table 1**, which include all of the parameters in Appendices III and IV of CCR Rule Part 257. In addition to the parameters listed in **Table 1**, each sample was also analyzed for Total Suspended Solids (TSS).

Table 1. Groundwater quality parameters	
Appendix III Constituents for Detection Monitoring	**Appendix IV Constituents for Assessment Monitoring**
Boron	Antimony
Calcium	Arsenic
Chloride	Barium
Fluoride	Beryllium
pH	Cadmium
Sulfate	Chromium
Total Dissolved Solids (TDS)	Cobalt
Additional Parameters	Fluoride
Total Suspended Solids (TSS)	Lead
	Lithium
	Mercury
	Molybdenum
	Selenium
	Thallium
	Radium-226 and -228 combined

4.0 Data Validation and Data Management

Data validation was conducted to eliminate data that did not meet validation criteria and designate a data qualifier for any data quality limitation discovered. Data validation was performed by the HDR Project Chemist on each data package received from the analytical laboratory. All data validation was performed per the Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule document (HDR, 2018).

Data management for all sampling events follows the protocol detailed in the Data Management and Statistical Procedures Plan (HDR, 2018). The Project Data Manager inputs data from field data forms into an Excel database. The Project Database Manager acquires the electronic field database from the Data Manager and the laboratory electronic data deliverable (EDD) files after receiving notification from the Data Validator that the data validation process is complete. Once review is complete and the EDD passes a final check using an EQuIS Data Processor program, the files are uploaded into an EQuIS database for the project where data can be provided to the Statistician for use in ProUCL. Ultimately the database is exported to Manages, Public Service Company of Colorado's (PSCo) chosen database, and delivered to the PSCo Project Manager.

5.0 Water Levels and Flow Direction

Water levels were measured in the 11 site monitoring wells between fourth quarter 2015 and third quarter 2017. Water levels are provided in **Table 2** and displayed graphically in **Figure 3** (landfill wells) and **Figure 4** (impoundment wells). Groundwater contours are provided for December 2015 only (**Appendix A**) to illustrate the groundwater wells chosen for development of BTVs for the site are located upgradient of the CCR units. Groundwater flow under the landfill between December

2015 and July 2017 was generally to the south. The water levels (**Figure 3**) and contour map (**Appendix A**) confirms that monitoring well MW-7 is located upgradient of the landfill. Additional groundwater contour maps will be developed for the other monitoring events and included in Annual Groundwater Monitoring Reports.

The flow of groundwater in the downgradient wells immediately adjacent to the impoundments and the upgradient well MW-1P appear to be controlled by Leggett Reservoir water level. The contractor that conducted the periodic excavation of the impoundments during operations reported that the impoundments required continuous dewatering when they were excavated for maintenance (approximately 500 gallons per minute), and after excavation, the impoundments rapidly filled back in with water up to approximately the same elevation as the reservoir. This indicates there is hydraulic connectivity between the impoundments and the reservoir. MW-1P is also influenced by the Leggett Reservoir, but is located approximately 300 feet south of the impoundments. The water levels (**Figure 4**) and contour map (**Appendix A**) confirm that monitoring well MW-1P is located upgradient or at a side gradient, but is sufficient to serve as the upgradient well for the impoundments.

Table 2. Groundwater elevations in monitoring wells at Valmont Station

Site	Well ID	Water Elevation (ft amsl) December 2015	Water Elevation (ft amsl) March 2016	Water Elevation (ft amsl) May 2016	Water Elevation (ft amsl) August 2016	Water Elevation (ft amsl) November 2016	Water Elevation (ft amsl) February 2017	Water Elevation (ft amsl) May 2017	Water Elevation (ft amsl) July 2017	Casing Elevation (ft amsl)	CCR Facility
Valmont	MW-1	5226.63	5226.7	5226.35	5226.33	5224.72	5224.86	5225.19	5225.9	5234.27	Landfill
Valmont	MW-3	5227.94	5228.09	5227.85	5227.67	5226.33	5226.37	5226.87	5227.4	5233.52	Landfill
Valmont	MW-4	5227.81	5227.73	5227.68	5227.43	5227.43	5227.59	5227.53	5227.18	5237.21	Landfill
Valmont	MW-6	5215.67	5215.6	5216.21	5215.55	5214.33	5214.57	5214.57	5215.05	5235.23	Landfill
Valmont	MW-7	5270.31	5267.18	5278.34	5271.8	5268.26	5266.01	5265.38	5266.49	5299.46	Landfill – Upgradient/ Background
Valmont	MW-8	5212.07	5211.36	5212.08	5211.62	5210.69	5210.64	5210.71	5211.44	5234.97	Landfill
Valmont	MW-1P	5226.52	5226.5	5226.33	5226.18	5225.26	5225.29	5226.04	5226.42	5234.28	Impoundments – Upgradient/ Background
Valmont	MW-9	5226.49	5226.46	5226.33	5226.27	5225.22	5225.28	5225.94	5226.58	5234.25	Impoundments
Valmont	MW-10	5226.72	5226.79	5226.59	5226.38	5225.4	5225.6	5225.81	5226.68	5233.81	Impoundments
Valmont	MW-11	5225.5	5226.51	5226.22	5226.32	5225.02	5225.26	5225.64	5226.53	5235.22	Impoundments
Valmont	MW-12	5226.03	5226.47	5226.26	5226.3	5225.06	5225.12	5225.9	5226.58	5235.05	Impoundments

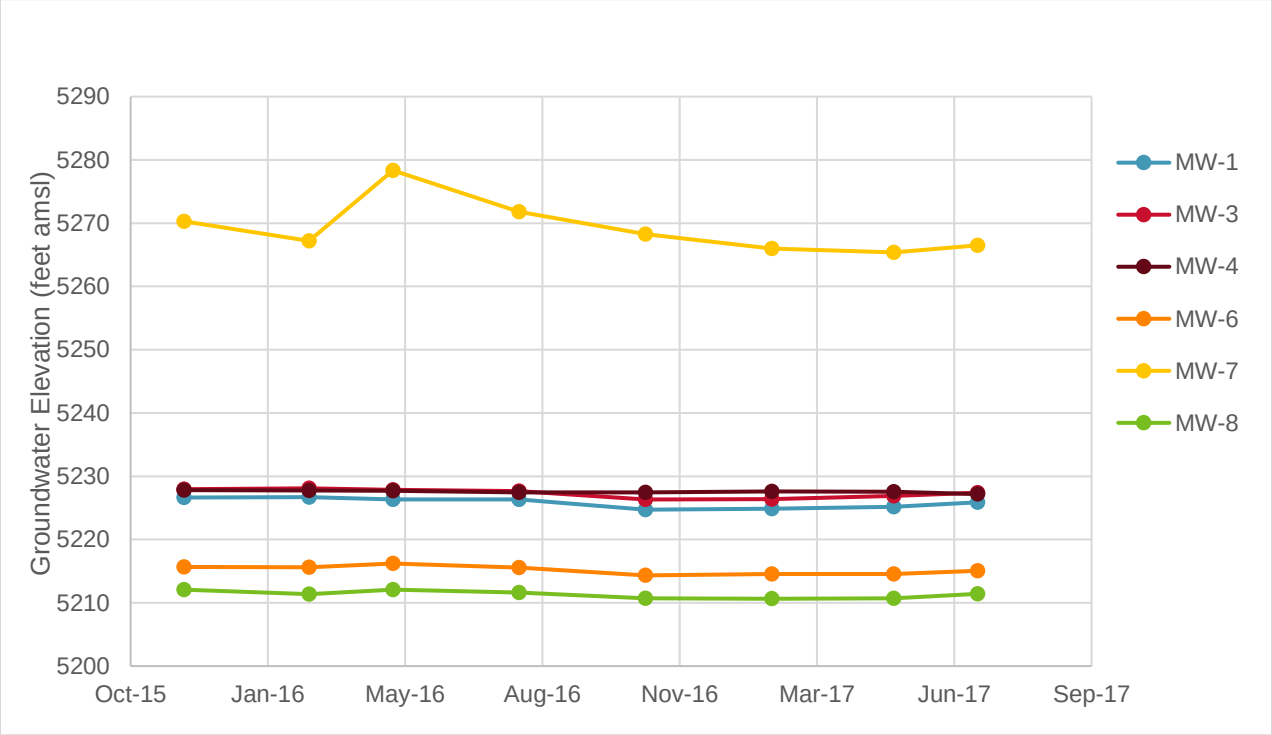

Figure 3. Groundwater elevations at landfill wells observed each quarter.

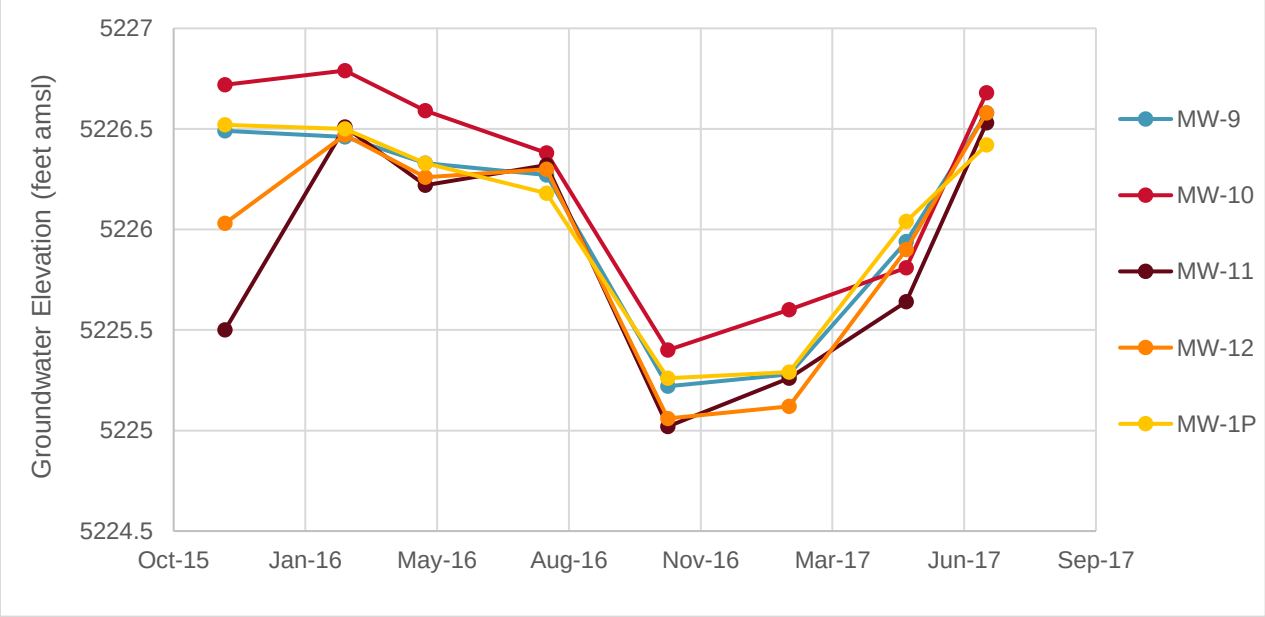

Figure 4. Groundwater elevations at impoundment wells observed each quarter.

6.0 Evaluation of Background Water Quality Data for the Landfill

6.1 Constituents

The statistical analyses detailed in the following sections pertain to samples collected from landfill background monitoring well MW-7 between December 17, 2015 and July 10, 2017. Eight groundwater sampling events occurred between December 17, 2015 and July 10, 2017 and samples were analyzed for the constituents listed in Appendix III and IV of the CCR Rule and for certain physical parameters. Only non-filtered Appendix III and IV sample results were utilized for the statistical analysis. Some constituents (total suspended solids, and temperature), not listed on Appendix III or IV, were analyzed to help provide context to observed patterns for Appendix III and IV constituents. For example, the results for these analytes may help in determining if there are possible conditions that might impact the reliability of the data. Reporting units, number of observations, number of non-detects (NDs), and percentage of NDs below detection limits (BDL) for each constituent are listed in **Table 3**. Laboratory reports from the eight background sample events for MW-7 are provided in **Appendix B**.

Statistical analysis was performed and the data was analyzed for outliers, data distribution, and trends.

Table 3. Preliminary data analysis

Constituent	CAS Number	Units	No. Observations	No. NDs	% NDs BDL
Antimony	7440-36-0	mg/l	8	0	0
Arsenic	7440-38-2	mg/l	8	0	0
Barium	7440-39-3	mg/l	8	0	0
Beryllium	7440-41-7	mg/l	8	5	62.5
Boron	7440-42-8	mg/l	8	0	0
Cadmium	7440-43-9	mg/l	8	3	37.5
Calcium	7440-70-2	mg/l	8	0	0
Chloride (as Cl)	16887-00-6	mg/l	8	0	0
Chromium, Total	7440-47-3	mg/l	8	0	0
Cobalt	7440-48-4	mg/l	8	0	0
Fluoride	16984-48-8	mg/l	8	0	0
Lead	7439-92-1	mg/l	8	0	0
Lithium	7439-93-2	mg/l	8	0	0
Mercury	7439-97-6	mg/l	8	7	87.5
Molybdenum	7439-98-7	mg/l	8	0	0
pH	PH	su	8	0	0
Radium-226-228		pci/l	8	1	12.5
Selenium	7782-49-2	mg/l	8	0	0
Sulfate (as SO4)	14808-79-8	mg/l	8	0	0
Temperature	TEMP	deg c	8	0	0
Thallium	7440-28-0	mg/l	8	6	75
Total Dissolved Solids	TDS	mg/l	8	0	0
Total Suspended Solids	TSS	mg/l	8	0	0

6.2 Outliers

Outliers are values that are not representative of the population from which they are sampled. The data set was screened for outliers using the Dixon's Outlier Test which is suitable for data sets containing less than 25 samples. The outlier test was conducted using a significance of 1 percent. For those constituents which had NDs, the NDs were removed prior to testing for outliers. Statistical outliers are listed in **Table 4**.

Table 4. Dixon's Outlier Test results

Constituent	Unit	Mean	Standard Deviation	No. of Observations	No. of NDs	Outliers - Tests conducted at the 1% level of significance
Antimony	mg/l	0.002	0.003	8	0	0.009
Arsenic	mg/l	0.002	0.002	8	0	0.007
Barium	mg/l	0.037	0.030	8	0	0.110
Boron	mg/l	0.511	0.375	8	0	1.400
Calcium	mg/l	49.375	14.928	8	0	84.0
Chromium, Total	mg/l	0.010	0.016	8	0	0.048
Cobalt	mg/l	0.001	0.001	8	0	0.005
Lead	mg/l	0.003	0.004	8	0	0.012
Lithium	mg/l	0.048	0.015	8	0	0.083
Molybdenum	mg/l	0.008	0.008	8	0	0.028
Sulfate (as SO4)	mg/l	203.375	210.312	8	0	720.0
Total Dissolved Solids	mg/l	828.750	321.356	8	0	1,600.0
Radium-226/228	pci/l	1.066	0.571	8	1	2.310

Antimony, arsenic, barium, boron, calcium, total chromium, cobalt, lead, lithium, molybdenum, sulfate (as SO4), total dissolved solids, and radium-226/228 statistical outliers, which were identified as the highest values in the data set. Quality control conducted on the sampling protocols and laboratory results did not indicate reasons for the noted concentrations of the outliers on the dates they were sampled. No unusual weather or anthropogenic activity occurred which could explain the higher concentrations. As the sample size is very small from a statistical perspective, the variability in the concentrations of these constituents will change as additional samples are obtained. The sample's variability for each constituent will approach the true underlying variability of concentrations in groundwater in the vicinity of the background well with the increasing number of samples. Values considered as potential outliers when only eight samples are available may no longer be considered outliers after 20 or more samples have been obtained. For the purpose of estimating background field conditions, all values will be used. The distributional patterns for these constituents and physical parameters will continue to be monitored as sampling events are added to the background.

6.3 Data Distribution

Groundwater data was fitted to known distribution models using goodness-of-fit (GOF) tests incorporated in ProUCL. For data sets comprised of 50 or fewer samples, ProUCL's GOF module incorporates the Shapiro-Wilk to determine normal or lognormal distribution and Anderson-Darling to determine gamma distribution. Note that ProUCL does not provide GOF results for data sets with less than three detected values due to insufficient data. For purposes of estimating background concentration levels, these data sets will be treated under nonparametric distribution assumptions with the maximum detected value chosen to represent the background concentration levels until more data can be collected. All remaining constituents have a parametric distribution.

Arsenic, barium, lithium, molybdenum, sulfate (as SO4), and total dissolved solids were found to have a nonparametric fit to their respective data sets. Mercury and thallium, due to less than three detected values, will be treated under nonparametric distribution assumptions. Additional sampling rounds are needed in order to determine if these constituent's data sets are better described using parametric distributions such as normal, lognormal, or gamma.

6.4 Serial Correlation

Sources for serial correlation in groundwater samples can be due to temporal effects (i.e., autocorrelation) or seasonal effects (i.e., seasonality). Part §257.93(g)(6) of the CCR Rule requires that if necessary, the statistical method must include procedures to control or correct for seasonal as well as temporal correlation in the data.

6.4.1 Autocorrelation

Autocorrelation occurs when measurements collected at different points in time correlate with one another. A minimum of at least 50 samples are recommended to test for autocorrelation. Constituents will be analyzed for autocorrelation as additional sampling is conducted in order to determine if samples are autocorrelated.

6.4.2 Seasonality

Constituents in groundwater at background well locations may experience predictable recurring increases and decreases in concentrations, termed seasonality. The small data set, 8 samples total (2 winter, 3 spring, 2 summer, 1 fall), does not allow for accurate statistical analysis of seasonality. A minimum of 8 samples per season (winter, spring, summer, and fall) is required to test for seasonal differences but at least 20 samples per season are recommended in order to deseasonalize the data. Constituents will be analyzed for seasonality using the Kruskall-Wallis, ANOVA and Log ANOVA tests as additional sampling is conducted in order to determine if samples are affected by seasonality.

6.5 Trends

A key assumption regarding background is constituent concentrations in groundwater should demonstrate stationary conditions through time, free of any trends. Constituents which follow parametric distributions were analyzed for trends within the data set using a Maximum Likelihood Estimate (MLE) regression. The Mann-Kendall was used to analyze linear trends within data sets that do not adhere to a specific distribution model (i.e., nonparametric).

For those that showed statistically significant upwards or downwards trends, trends were checked against results using piecewise linear-linear and a piecewise linear-linear-linear analyses. The

linear-linear regression assumes and identifies one structural break within the time series, and the linear-linear-linear regression assumes two structural breaks within the time series. Piecewise regression models are not able to account for NDs within the data sets and are typically used for data sets containing over 20 observations. For the purpose of this analysis, the piecewise regression results are used as visual aids to better understand the statistically significant trends identified when using either the MLE or Mann-Kendall trend tests.

The MLE can be applied to data sets that can be fitted to a specific distribution model, do not demonstrate seasonality and contain NDs. MLE results for those constituents or physical parameters with sufficient number of detected values are depicted in **Table 5**.

Table 5. Maximum Likelihood Estimate (MLE)

Parameter	Unit	N	No. BDL	% BDL	Slope	P-value	Trend
Appendix III Constituents							
Boron	mg/l	8	0	0	-0.0013	0.1059	↔
Calcium	mg/l	8	0	0	-0.0002	0.5764	↔
Chloride (as Cl)	mg/l	8	0	0	0.0000	0.9046	↔
Fluoride	mg/l	8	0	0	0.0008	0.0262	↑
pH	su	8	0	0	0.0000	0.1895	↔
Appendix IV Constituents							
Antimony	mg/l	8	0	0	-0.0024	0.0424	↓
Cadmium	mg/l	8	3	37.5	0.0000	0.9746	↔
Chromium, Total	mg/l	8	0	0	-0.0036	0.0088	↓
Cobalt	mg/l	8	0	0	-0.0021	0.0807	↔
Lead	mg/l	8	0	0	-0.0030	0.0583	↔
Selenium	mg/l	8	0	0	-0.0010	0.2456	↔
Radium-226/228	pci/l	8	1	12.5	-0.0020	0.0016	↓
Physical Parameters							
Total Suspended Solids	mg/l	8	0	0	-0.0041	0.0324	↓

The Mann-Kendall test is suitable for data series with no discernable distributions, no seasonality, and only one value of the method detection limit (MDL). Mann-Kendall results for those constituents or physical parameters with sufficient number of detected values are depicted in **Table 6**.

Table 6. Mann-Kendall

Parameter	Unit	N	No. BDL	% BDL	Standard Deviation	P-value	Trend
Appendix III Constituents							
Sulfate (as SO4)	mg/l	8	0	0	210.3000	0.1380	↔
Total Dissolved Solids	mg/l	8	0	0	321.4000	0.0540	↔
Appendix IV Constituents							
Arsenic	mg/l	8	0	0	0.0021	0.3600	↔
Barium	mg/l	8	0	0	0.0298	0.5480	↔
Lithium	mg/l	8	0	0	0.0146	0.3600	↔
Molybdenum	mg/l	8	0	0	0.0081	0.0160	↓

Antimony, total chromium, radium 226/228, and total suspended solids show a statistically significant decreasing trend on the MLE regression. The MLE regression line appears to be influenced by the elevated sample result for each constituent collected during the December 17, 2015 sampling event. The piecewise trend analyses do not show a trend for antimony, total chromium, or total suspended solids. Based on lack of correlation between trend tests, small sample size (8), and the influence of the December 17, 2015 observation on the MLE regression, the predicted MLE regression of a decreasing trend is considered preliminary and requires further statistical analysis with a larger data set.

The MLE regression for fluoride depicts a statistically significant increasing trend. The piecewise regression results do not show a trend for fluoride. Based on lack of correlation between trend tests, the small sample size (8) and condensed range of data (0.20 mg/L – 0.47 mg/L), the predicted MLE regression of an increasing trend is considered preliminary and requires further statistical analysis with a larger data set.

The Mann-Kendall for molybdenum depicts a decreasing trend. The piecewise regression results do not show a trend for molybdenum. Based on lack of correlation between trend tests, and the small sample size (8) the predicted Mann-Kendall of a decreasing trend is considered preliminary and requires further statistical analysis with a larger data set.

6.6 Summary of Statistical Analysis

A separate Data Management and Statistical Procedures Plan (HDR, 2018) has been prepared, which presents the data management, data validation, and statistical procedures for evaluating data to select statistical method(s) required for evaluating groundwater monitoring data, as required by the CCR Rule. Groundwater monitoring data from the detection monitoring event has been evaluated in accordance with the procedures presented in the Statistical Procedures Plan.

Based on the small sample size, additional sampling is necessary in order to determine the validity of outliers, whether parametric or nonparametric distributions best explain the data sets and if samples are autocorrelated and/or affected by seasonality and/or trends. A summary of statistical results by constituent is depicted in **Table 7**.

Table 7. Summary of statistical results by constituent

Parameter	Outliers	Nonparametric Data Distribution	Trends
Antimony	✓		✓
Arsenic	✓	✓	
Barium	✓	✓	
Beryllium			
Boron	✓		
Calcium	✓		
Chromium, Total	✓		✓
Cobalt	✓		
Fluoride			✓
Lead	✓		
Lithium	✓	✓	
Molybdenum	✓	✓	✓
Radium-226/228	✓		✓
Sulfate (as SO4)	✓	✓	
Total Dissolved Solids	✓	✓	
Total Suspended Solids			✓

✓Constituents were flagged during statistical analysis

6.7 Background Threshold Values

For the purpose of estimating background threshold values (BTVs) to represent background concentration levels and for future use in evaluating whether samples selected from downgradient wells exhibit statistically significant increases (SSIs) during detection monitoring, all eight samples per constituent from MW-7 were used.

The BTVs for the Valmont landfill site are the upper prediction limit (UPL) values from the background data. Upper Prediction Limits are one of the statistical methods specified under 257.93(f)(3). The details as to which UPL formula was used per constituent are provided in the Data Management and Statistical Procedures Plan (HDR, 2018). The test significance level per constituent has been estimated such that the cumulative false positive rate over all constituent/well pair comparisons is approximately 10 percent. COIs sampled from the downgradient wells during the detection monitoring round are compared to their respective BTVs. If the concentration from a COI is higher than its BTV, then the sample can be considered an SSI. Note that for pH, both the UPL and the lower prediction limit (LPL) are of interest as pH values outside the prediction interval at the downgradient wells can be considered statistically significant.

7.0 Evaluation of Background Water Quality Data for the Impoundments

7.1 Constituents

The statistical analyses detailed in the following sections pertain to samples collected from impoundment background monitoring well MW-1P. Eight groundwater sampling events occurred between December 9, 2015 and July 13, 2017 and samples were analyzed for the constituents listed in Appendix III and IV of the CCR Rule and for certain physical parameters. Only non-filtered Appendix III and IV sample results were utilized for the statistical analysis. Some constituents (total suspended solids, and temperature), not listed in Appendix III or IV, were analyzed to help provide context to observed patterns for the Appendix III and IV constituents. For example, their results may help determine if there are conditions that impact the reliability of the data. Reporting units, number of observations, number of NDs, and percentage of NDs BDL for each constituent are listed in **Table 10**. Water quality results from the eight background sample events for MW-1P are provided in **Appendix B**.

Statistical analysis was performed and the data was analyzed for outliers, data distribution, and trends.

Table 8. Preliminary data analysis

Constituent	CAS No.	Units	No. Observations	No. NDs	% BDL
Antimony	7440-36-0	mg/L	8	2	25
Arsenic	7440-38-2	mg/L	8	0	0
Barium	7440-39-3	mg/L	8	0	0
Beryllium	7440-41-7	mg/L	8	6	75
Boron	7440-42-8	mg/L	8	0	0
Cadmium	7440-43-9	mg/L	8	0	75
Calcium	7440-70-2	mg/L	8	0	0
Chloride (as Cl)	16887-00-6	mg/L	8	0	0
Chromium, Total	7440-47-3	mg/L	8	3	37.5
Cobalt	7440-48-4	mg/L	8	0	0
Fluoride	16984-48-8	mg/L	8	0	0
Lead	7439-92-1	mg/L	8	2	25
Lithium	7439-93-2	mg/L	8	0	0
Mercury	7439-97-6	mg/L	8	8	100
Molybdenum	7439-98-7	mg/L	8	0	0
pH	PH	SU	8	0	0
Radium-226-228		pci/L	8	6	75
Selenium	7782-49-2	mg/L	8	0	0
Sulfate (as SO4)	14808-79-8	mg/L	8	0	0
Temperature	TEMP	deg C	8	0	0
Thallium	7440-28-0	mg/L	8	6	75
Total Dissolved Solids	TDS	mg/L	8	0	0
Total Suspended Solids	TSS	mg/L	8	0	0

7.2 Outliers

Outliers are values that are not representative of the population from which they are sampled. The data set was screened for outliers using the Dixon's Outlier Test which is suitable for data sets containing less than 25 samples. The outlier test was conducted using a significance of 1 percent. For those constituents which had NDs, the NDs were removed prior to testing for outliers. Statistical outliers are listed in **Table 11**.

Table 9. Dixon's Outlier Test results

Constituent	Unit	Mean	Standard Deviation	No. of Observations	No. NDs	Outliers - Tests conducted at the 1% level of significance
Barium	mg/l	0.176	0.064	8	0	0.330
Cobalt	mg/l	0.001	0.002	8	0	0.005
Lead	mg/l	0.001	0.001	8	2	0.002

Barium, cobalt, and lead statistical outliers, which were identified as the highest values in the data set. Quality control conducted on the sampling protocols and laboratory results did not indicate reasons for the noted concentrations of the outliers on the dates they were sampled. No unusual weather or anthropogenic activity occurred which could explain the higher concentrations. As the sample size is very small from a statistical perspective, the variability in the concentrations of these constituents will change as additional samples are obtained. The sample's variability for each constituent will approach the true underlying variability of concentrations in groundwater in the vicinity of the background well with the increasing number of samples. Values considered as potential outliers when only 8 samples are available may no longer be considered outliers after 20 or more samples have been obtained. For the purpose of estimating background field conditions, all values will be used. The distributional patterns for these constituents and physical parameters will continue to be monitored as sampling events are added to background.

7.3 Data Distribution

Groundwater data was fitted to known distribution models using GOF tests incorporated in ProUCL. For data sets comprised of 50 or fewer samples, ProUCL's GOF module incorporates the Shapiro-Wilk to determine normal or lognormal distribution and Anderson-Darling to determine gamma distribution. Note that ProUCL does not provide GOF results for data sets with less than three detected values due to insufficient data. For purposes of estimating background concentration levels, these data sets will be treated under nonparametric distribution assumptions with the maximum detected value chosen to represent the background concentration levels until more data can be collected.

Barium and cobalt were found to have a nonparametric fit to their respective data sets. Beryllium, cadmium, mercury, radium-226/228, and thallium, due to less than three detected values, will be treated under nonparametric distribution assumptions. Additional sampling rounds are needed in order to determine if these constituents' data sets are better described using parametric distributions such as normal, lognormal or gamma. All remaining constituents have a parametric distribution.

7.4 Serial Correlation

Sources for serial correlation in groundwater samples can be due to temporal effects (i.e., autocorrelation) or seasonal effects (i.e., seasonality). Part §257.93(g)(6) of the CCR Rule requires that if necessary, the statistical method must include procedures to control or correct for seasonal as well as temporal correlation in the data.

7.4.1 Autocorrelation

Autocorrelation occurs when measurements collected at different points in time correlate with one another. A minimum of at least 50 samples are recommended to test for autocorrelation. Constituents will be analyzed for autocorrelation as additional sampling is conducted in order to determine if samples are autocorrelated.

7.4.2 Seasonality

Constituents in groundwater at background well locations may experience predictable recurring increases and decreases in concentrations, termed seasonality. The small data set, 8 samples total (2 winter, 3 spring, 2 summer, 1 fall), does not allow for accurate statistical analysis of seasonality. A minimum of 8 samples per season (winter, spring, summer, and fall) is required to test for seasonal differences but at least 20 samples per season are recommended in order to deseasonalize the data. Constituents will be analyzed for seasonality using the Kruskall-Wallis, ANOVA and Log ANOVA tests as additional sampling is conducted in order to determine if samples are affected by seasonality.

7.5 Trends

A key assumption regarding background is constituent concentrations in groundwater should demonstrate stationary conditions through time, free of any trends. Constituents which follow parametric distributions were analyzed for trends within the data set using an MLE regression. The Mann-Kendall was used to analyze linear trends within data sets that do not adhere to a specific distribution model (i.e., nonparametric).

For those that showed statistically significant upwards or downwards trends, trends were checked against results using piecewise linear-linear, and a piecewise linear-linear-linear analyses. The linear-linear regression assumes and identifies one structural break within the time series, and the linear-linear-linear regression assumes two structural breaks within the time series. Piecewise regression models are not able to account for NDs within the data sets and are typically used for data sets containing over 20 observations. For the purpose of this analysis, the piecewise regression results are used as visual aids to better understand the statistically significant trends identified when using either the MLE or Mann-Kendall trend tests.

The MLE can be applied to data sets that can be fitted to a specific distribution model, do not demonstrate seasonality and contain NDs. MLE results for those constituents or physical parameters with sufficient number of detected values are depicted in **Table 12**.

The Mann-Kendall test is suitable for data series with no discernable distributions, no seasonality, and only one value of the MDL. Mann-Kendall results for these constituents or physical parameters with sufficient number of detected values are depicted in **Table 13**.

Table 10. Maximum Likelihood Estimate (MLE)

Parameter	Unit	N	No. BDL	% BDL	Slope	P-value	Trend
Appendix III Constituents							
Boron	mg/l	8	0	0	-0.0003	0.4158	↔
Calcium	mg/l	8	0	0	-0.0003	0.1522	↔
Chloride (as Cl)	mg/l	8	0	0	0.0001	0.0706	↔
Fluoride	mg/l	8	0	0	0.0001	0.6621	↔
pH	su	8	0	0	0.00	0.1639	↔
Sulfate (as SO4)	mg/l	8	0	0	-0.0009	0.0208	↓
Total Dissolved Solids	mg/l	8	0	0	-0.0003	0.1870	↔
Appendix IV Constituents							
Antimony	mg/l	8	2	25	-0.0005	0.6623	↔
Arsenic	mg/l	8	0	0	0.0005	0.3875	↔
Chromium, Total	mg/l	8	3	37.5	-0.0032	0.3217	↔
Lead	mg/l	8	2	25	-0.0011	0.5809	↔
Lithium	mg/l	8	0	0	-0.0008	0.2873	↔
Molybdenum	mg/l	8	0	0	-0.0001	0.6552	↔
Selenium	mg/l	8	0	0	-0.0007	0.4734	↔
Physical Parameters							
Temperature	deg c	8	0	0	-0.0001	0.3746	↔
Total Suspended Solids	mg/l	8	0	0	-0.0023	0.0039	↓

Table 11. Mann-Kendall

Parameter	Unit	N	No. BDL	% BDL	Standard Deviation	P-value	Trend
Appendix IV Constituents							
Barium	mg/l	8	0	0	0.0637	0.5480	↔
Cobalt	mg/l	8	0	0	0.0017	0.3660	↔

The only two constituents which had statistically significant decreasing trends over time based on the MLE regression are sulfate (as SO4) and total suspended solids.

The MLE regression fitted trend for sulfate appears to be influenced by the elevated sample (120 mg/L) collected on May 20, 2016. By July 13, 2017, sulfate had rebounded and appeared to be increasing rather than decreasing. The piecewise trend analysis for sulfate did not show a trend. Based on lack of correlation between trend tests, small sample size (8), and the increased sulfate concentration for the latest sample, the MLE regression's result of a decreasing trend is considered preliminary and requires further statistical analysis with a larger data set.

The MLE regression for total suspended solids also depicts a decreasing trend. The MLE regression's fitted trend appears to be influenced by the elevated sample (14 mg/L) collected on March 7, 2016. The piecewise trend analysis does not show a trend for total suspended solids.

Based on lack of correlation between trend tests, the small sample size (8) and condensed range of data (2 mg/L - 14 mg/L), the predicted MLE Regression of a decreasing trend is considered preliminary and requires further statistical analysis with a larger data set.

7.6 Summary of Statistical Analysis

A separate Data Management and Statistical Procedures Plan (HDR, 2018) has been prepared, which presents the data management, data validation, and statistical procedures for evaluating data to select statistical method(s) required for evaluating groundwater monitoring data, as required by the CCR Rule. Groundwater monitoring data from the detection monitoring event has been evaluated in accordance with the procedures presented in the Statistical Procedures Plan.

Based on the small sample size, additional sampling is necessary in order to determine the validity of outliers, whether parametric or nonparametric distributions best explain the data sets, and if samples are autocorrelated and/or affected by seasonality and/or trends. A summary of statistical results by constituent is depicted in **Table 14.**

Table 12. Summary of statistical results by constituent

Parameter	Outliers	Nonparametric Data Distribution	Trends
Barium	✓	✓	
Cobalt	✓	✓	
Lead	✓		
Sulfate (as SO4)			✓
Total Suspended Solids			✓

✓Constituents was flagged during statistical analysis

7.7 Background Threshold Values

For the purpose of estimating background threshold values (BTVs) to represent background concentration levels and for future use in evaluating whether samples selected from downgradient wells exhibit statistically significant increases (SSIs) during detection monitoring, all eight samples per constituent from MW-1P were used.

The BTVs for the Valmont impoundments site are the upper prediction limit (UPL) values from the background data. Upper Prediction Limits are one of the statistical methods specified under 257.93(f)(3). The details as to which UPL formula was used per constituent are provided in the Data Management and Statistical Procedures Plan (HDR, 2018). The test significance level per constituent has been estimated such that the cumulative false positive rate over all constituent/well pair comparisons is approximately 10 percent. COIs sampled from the downgradient wells during the detection monitoring round are compared to their respective BTVs. If the concentration from a COI is higher than its BTV, then the sample can be considered an SSI. Note that for pH, both the UPL and the lower prediction limit (LPL) are of interest as pH values outside the prediction interval at the downgradient wells can be considered statistically significant.

8.0 References

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U.S. Environmental Protection Agency (USEPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, USEPA, EPA 530/R-09-007, 2009.

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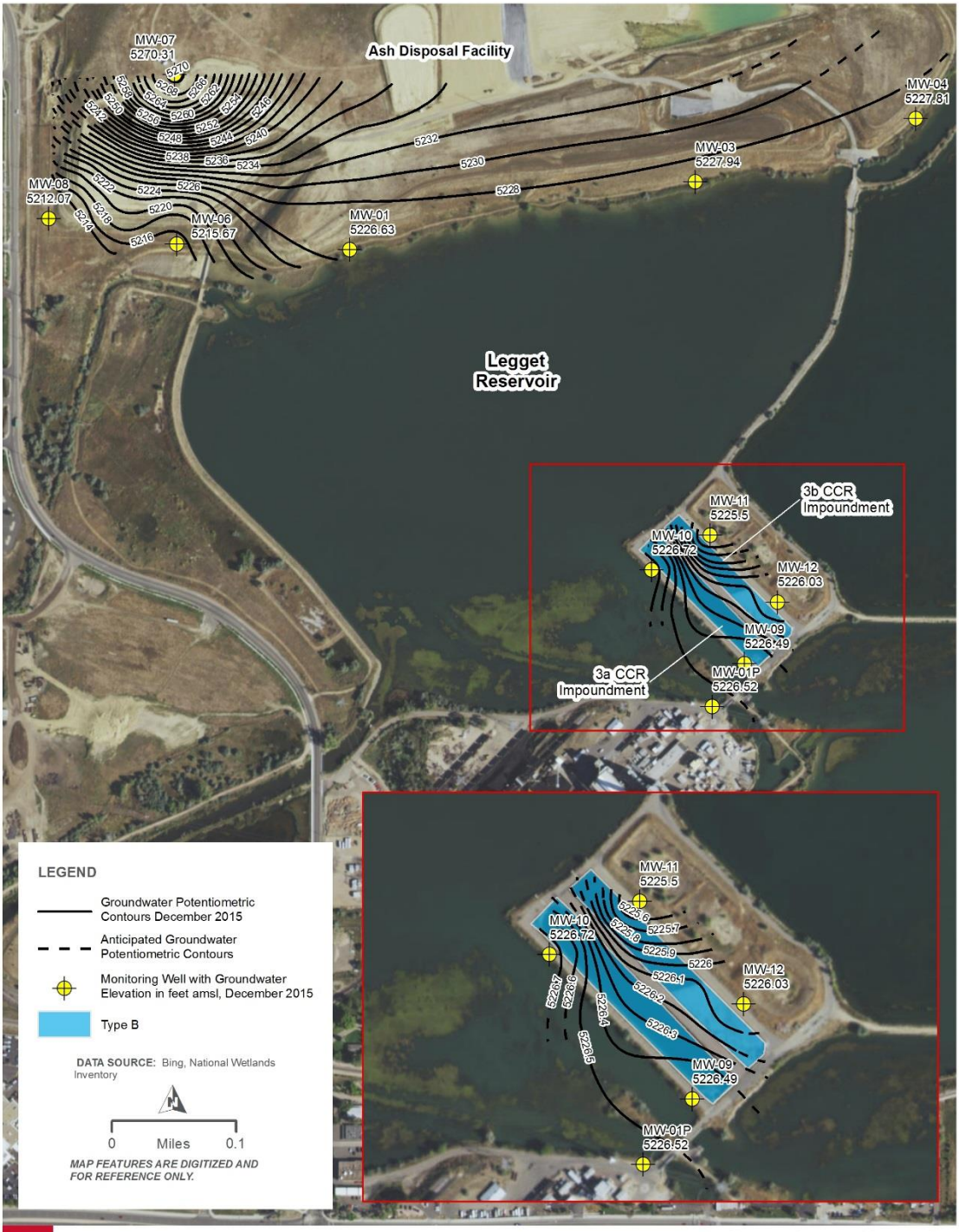
Appendix A

Groundwater Potentiometric Map



Xcel Energy℠

VALMONT POWER STATION

BOULDER COUNTY, CO

PATH: J:\2016\16-116_XCEL_CORE_SAMPLING_TESTING_(WALTHER)\MAP_DOCS\GROUNDWATER_CONTROURS\VALMONT_POWER_STATION_PORTAIT_GW_WELL_CERT_GWELEV201612.MXD - USER: BHOSFORD - DATE: 12/9/2016

Appendix B

Laboratory Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-77926-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
2/26/2016 10:29:05 AM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
E	Result exceeded calibration range.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-77926-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-77926-1

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.

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.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

RECEIPT

The samples were received on 12/11/2015 at 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.1º C, 0.2º C and 0.8º C.

The requested metals analysis was subcontracted to TestAmerica's North Canton laboratory.

The requested Ra-226/Ra-228 analyses were subcontracted to TestAmerica's St. Louis laboratory.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 12/17/2015 and 12/21/2015 and analyzed on 12/18/2015, 12/22/2015, 12/23/2015 and 12/29/2015.

Beryllium and Cobalt were detected in method blank MB 240-211228/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Boron failed the recovery criteria low for the MS of sample MW-12 (280-77926-1) in batch 240-212003. Calcium and Boron failed the recovery criteria high for the MSD of sample MW-12 (280-77926-1) in batch 240-212003. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Samples MW-12 (280-77926-1)[50X], MW-11 (280-77926-2)[40X], MW-10 (280-77926-3)[200X], MW-9 (280-77926-4)[200X], PLANT MW-1 (280-77926-5)[20X], MW-4 (280-77926-6)[10X], MW-3 (280-77926-7)[10X] and MW-12D (280-77926-8)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4

Job ID: 280-77926-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

(280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 12/16/2015.

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

TOTAL DISSOLVED SOLIDS

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 12/14/2015 and 12/17/2015.

Reanalysis of the following sample was performed outside of the analytical holding time due to high residue (E flag): MW-4 (280-77926-6). The reanalysis was within the acceptable limits and confirmed the original result; as such, these data have been quantified.

The analysis volume selected for the following sample produced a base result greater than 200mg before calculation of the final result: MW-4 (280-77926-6). Reanalysis was performed outside of the hold time however, the duplicate analysis was in agreement with the results in the original analysis. The reference method specifies that no more than 200mg of weight be recovered for a chosen sample analysis volume in order to produce the best data precision. As such, these data have been qualified.

Constant weight was not achieved after 4 drying cycles for the following samples: MW-11 (280-77926-2), MW-10 (280-77926-3), MW-4 (280-77926-6).

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

TOTAL SUSPENDED SOLIDS

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 12/15/2015 and 12/16/2015.

The following sample was diluted due to slow filtration and high Total Suspended Solids: MW-4 (280-77926-6). Elevated reporting limits (RLs) are provided.

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

CORROSIVITY (PH)

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 12/16/2015 and 12/17/2015.

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

ANIONS (28 DAYS)

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 12/22/2015.

Samples MW-11 (280-77926-2)[10X], MW-10 (280-77926-3)[10X], MW-9 (280-77926-4)[5X], MW-4 (280-77926-6)[2X], MW-4 (280-77926-6)[50X] and MW-3 (280-77926-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 01/15/2016, 02/24/2016 and 12/21/2015 and analyzed on 01/12/2016,

Job ID: 280-77926-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

02/08/2016 and 02/09/2016.

The barium carrier recovery is outside the lower control limit for the following sample: MW-4 (280-77926-6).

The barium carrier recovery is outside the upper control limit for the following samples: MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-3 (280-77926-7).

Sample MW-4 (280-77926-6) was reduced to 250 mL because the sample is a cloudy/milky color.

The samples were weighed at a reduced aliquot due to the sample bottles not being completely full: MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8), MW-12EB (280-77926-9).

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

RADIUM-228

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 01/15/2016 and 12/21/2015 and analyzed on 02/02/2016 and 12/24/2015.

The barium carrier recovery is outside the lower control limit for the following sample: MW-4 (280-77926-6).

The barium carrier recovery is outside the upper control limit for the following samples: MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-3 (280-77926-7).

The sample was weighed at a reduced aliquot due to the sample bottles not being completely full: MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8), MW-12EB (280-77926-9).

Sample MW-4 (280-77926-6) was reduced to 250 mL because the sample is a cloudy/milky color.

The radium-228 detection goal was not met for the following samples due to insufficient sample available for analysis: MW-4 (280-77926-6). 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.

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-12 (280-77926-1), MW-11 (280-77926-2), MW-10 (280-77926-3), MW-9 (280-77926-4), PLANT MW-1 (280-77926-5), MW-4 (280-77926-6), MW-3 (280-77926-7), MW-12D (280-77926-8) and MW-12EB (280-77926-9) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 02/25/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: MW-12 — Lab Sample ID: 280-77926-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00068	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0024	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.17		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00053	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	180		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00031	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.018	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.00061	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0050	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0018		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00092	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00015	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	4.3		1.0	0.55	mg/L	50		6020A	Total Recoverable
Lithium	0.0030	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.27	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.9	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	39		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.48	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	5.8		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	980		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	12		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-77926-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00054	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0023	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.074		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.0011	B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	190		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00097	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.028	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0010	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-11 (Continued) — Lab Sample ID: 280-77926-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.041		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0019		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0018	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00043	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	2.5		0.80	0.44	mg/L	40		6020A	Total Recoverable
Lithium	0.032		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.48	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.7	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	86		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.4		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	960		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1900		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	3.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-77926-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00023	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0013	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.068		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00060	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	110		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00013	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0088	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.22		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00026	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00067	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00013	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	16		4.0	2.2	mg/L	200		6020A	Total Recoverable
Lithium	0.035		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.81	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	61		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.6		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	590		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 280-77926-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-77926-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00022	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0020	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.056		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00044	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	110		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000086	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0089	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.16		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00035	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00030	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.000093	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	13		4.0	2.2	mg/L	200		6020A	Total Recoverable
Lithium	0.025		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.79	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.0	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	55		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.9		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	520		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: PLANT MW-1 — Lab Sample ID: 280-77926-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00077	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0043	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.17		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00022	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	100		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000061	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: PLANT MW-1 (Continued) — Lab Sample ID: 280-77926-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.00028	J B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00013	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0023	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00012	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	1.4		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	0.0074	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.68	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	78		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.91		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	85		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	570		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	9.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-77926-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00040	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.014		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.022		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00027	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	400		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00015	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0014	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0083		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.023		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0017		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.21		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.000081	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	1.0		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.19		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.69	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.9	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	560		150	13	mg/L	50		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4 (Continued) — Lab Sample ID: 280-77926-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.9		1.0	0.12	mg/L	2		9056A	Total/NA
Sulfate	5700		250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9500	E	40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	570		20	5.5	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-77926-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00070	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.018		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00022	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	490		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00016	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0011	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0025		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0010	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00074	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00069	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	1.3		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.060		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.36	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Sulfate	2400		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3900		40	19	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-12D — Lab Sample ID: 280-77926-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0025	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.18		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00014	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	180		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000067	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.019	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0050	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-12D (Continued)

Lab Sample ID: 280-77926-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0017		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00059	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	5.0		1.0	0.55	mg/L	50		6020A	Total Recoverable
Lithium	0.0033	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.22	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	38		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.47	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	5.5		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	980		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	11		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12EB

Lab Sample ID: 280-77926-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Beryllium	0.00012	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	5.76	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	17.0	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Sulfate	0.59	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	19		10	4.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-77926-1	MW-12	Water	12/08/15 16:00	12/11/15 08:00
280-77926-2	MW-11	Water	12/09/15 09:25	12/11/15 08:00
280-77926-3	MW-10	Water	12/09/15 11:15	12/11/15 08:00
280-77926-4	MW-9	Water	12/09/15 13:00	12/11/15 08:00
280-77926-5	PLANT MW-1	Water	12/09/15 14:50	12/11/15 08:00
280-77926-6	MW-4	Water	12/09/15 17:00	12/11/15 08:00
280-77926-7	MW-3	Water	12/10/15 11:00	12/11/15 08:00
280-77926-8	MW-12D	Water	12/08/15 16:00	12/11/15 08:00
280-77926-9	MW-12EB	Water	12/08/15 16:00	12/11/15 08:00

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-12
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00068	J	0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 14:48	1
Arsenic	0.0024	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 12:17	1
Barium	0.17		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 14:48	1
Beryllium	0.00053	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 14:48	1
Calcium	180		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 14:48	1
Cadmium	0.00031	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 14:48	1
Cobalt	0.018	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 14:48	1
Chromium	0.00061	J	0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 14:48	1
Molybdenum	0.0050	J	0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 12:17	1
Lead	0.0018		0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 14:48	1
Selenium	0.00092	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 14:48	1
Thallium	0.00015	J	0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 14:48	1
Boron	4.3		1.0	0.55	mg/L		12/21/15 10:26	12/22/15 12:18	50
Lithium	0.0030	J	0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 12:49	1

Client Sample ID: MW-11
Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00054	J	0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:08	1
Arsenic	0.0023	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 12:37	1
Barium	0.074		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:08	1
Beryllium	0.0011	B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:08	1
Calcium	190		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:08	1
Cadmium	0.00097	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:08	1
Cobalt	0.028	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:08	1
Chromium	0.0010	J	0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:08	1
Molybdenum	0.041		0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 12:37	1
Lead	0.0019		0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:08	1
Selenium	0.0018	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:08	1
Thallium	0.00043	J	0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:08	1
Boron	2.5		0.80	0.44	mg/L		12/21/15 10:26	12/22/15 12:34	40
Lithium	0.032		0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:09	1

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00023	J	0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:12	1
Arsenic	0.0013	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 12:41	1
Barium	0.068		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:12	1
Beryllium	0.00060	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:12	1
Calcium	110		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:12	1
Cadmium	0.00013	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:12	1
Cobalt	0.0088	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:12	1
Chromium	ND		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:12	1
Molybdenum	0.22		0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 12:41	1
Lead	0.00026	J	0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:12	1
Selenium	0.00067	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:12	1
Thallium	0.00013	J	0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:12	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	16		4.0	2.2	mg/L		12/21/15 10:26	12/22/15 12:38	200
Lithium	0.035		0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:13	1

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00022	J	0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:16	1
Arsenic	0.0020	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 12:45	1
Barium	0.056		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:16	1
Beryllium	0.00044	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:16	1
Calcium	110		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:16	1
Cadmium	0.000086	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:16	1
Cobalt	0.0089	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:16	1
Chromium	ND		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:16	1
Molybdenum	0.16		0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 12:45	1
Lead	0.00035	J	0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:16	1
Selenium	0.00030	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:16	1
Thallium	0.000093	J	0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:16	1
Boron	13		4.0	2.2	mg/L		12/21/15 10:26	12/22/15 12:42	200
Lithium	0.025		0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:17	1

Client Sample ID: PLANT MW-1
Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00077	J	0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:28	1
Arsenic	0.0043	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 12:49	1
Barium	0.17		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:28	1
Beryllium	0.00022	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:28	1
Calcium	100		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:28	1
Cadmium	0.000061	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:28	1
Cobalt	0.00028	J B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:28	1
Chromium	ND		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:28	1
Molybdenum	0.015		0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 12:49	1
Lead	0.00013	J	0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:28	1
Selenium	0.0023	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:28	1
Thallium	0.00012	J	0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:28	1
Boron	1.4		0.40	0.22	mg/L		12/21/15 10:26	12/22/15 12:46	20
Lithium	0.0074	J	0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:29	1

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00040	J	0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:32	1
Arsenic	0.014		0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 12:53	1
Barium	0.022		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:32	1
Beryllium	0.00027	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:32	1
Calcium	400		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:32	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00015	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:32	1
Cobalt	0.0014	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:32	1
Chromium	0.0083		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:32	1
Molybdenum	0.023		0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 12:53	1
Lead	0.0017		0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:32	1
Selenium	0.21		0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:32	1
Thallium	0.000081	J	0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:32	1
Boron	1.0		0.20	0.11	mg/L		12/21/15 10:26	12/22/15 12:59	10
Lithium	0.19		0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:33	1

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:35	1
Arsenic	0.00070	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 13:05	1
Barium	0.018		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:35	1
Beryllium	0.00022	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:35	1
Calcium	490		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:35	1
Cadmium	0.00016	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:35	1
Cobalt	0.0011	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:35	1
Chromium	0.0025		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:35	1
Molybdenum	0.0010	J	0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 13:05	1
Lead	0.00074	J	0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:35	1
Selenium	0.00069	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:35	1
Thallium	ND		0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:35	1
Boron	1.3		0.20	0.11	mg/L		12/21/15 10:26	12/22/15 13:04	10
Lithium	0.060		0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:37	1

Client Sample ID: MW-12D
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:39	1
Arsenic	0.0025	J	0.0050	0.00049	mg/L		12/21/15 10:26	12/23/15 13:08	1
Barium	0.18		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:39	1
Beryllium	0.00014	J B	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:39	1
Calcium	180		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:39	1
Cadmium	0.000067	J	0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:39	1
Cobalt	0.019	B	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:39	1
Chromium	ND		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:39	1
Molybdenum	0.0050	J	0.010	0.00023	mg/L		12/21/15 10:26	12/23/15 13:08	1
Lead	0.0017		0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:39	1
Selenium	0.00059	J	0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:39	1
Thallium	ND		0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:39	1
Boron	5.0		1.0	0.55	mg/L		12/21/15 10:26	12/22/15 13:08	50
Lithium	0.0033	J	0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 13:41	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-12EB
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 15:43	1
Arsenic	ND		0.0050	0.00049	mg/L		12/21/15 10:26	12/22/15 13:28	1
Barium	ND		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 15:43	1
Beryllium	**0.00012**	**J B**	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 15:43	1
Calcium	ND		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 15:43	1
Cadmium	ND		0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 15:43	1
Cobalt	ND		0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 15:43	1
Chromium	ND		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 15:43	1
Molybdenum	ND		0.010	0.00023	mg/L		12/21/15 10:26	12/22/15 13:28	1
Lead	ND		0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 15:43	1
Selenium	ND		0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 15:43	1
Thallium	ND		0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 15:43	1
Boron	ND		0.020	0.011	mg/L		12/21/15 10:26	12/22/15 13:28	1
Lithium	ND		0.0080	0.00029	mg/L		12/21/15 10:26	12/22/15 13:28	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-12
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:04	1

Client Sample ID: MW-11
Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:06	1

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:13	1

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:15	1

Client Sample ID: PLANT MW-1
Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:18	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:20	1

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:22	1

Client Sample ID: MW-12D
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:24	1

Client Sample ID: MW-12EB
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 18:27	1

General Chemistry

Client Sample ID: MW-12
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.27	HF	0.100	0.100	SU			12/17/15 00:34	1
Temperature	23.9	HF	1.00	1.00	Degrees C			12/17/15 00:34	1
Chloride	39		3.0	0.25	mg/L			12/22/15 14:55	1
Fluoride	0.48	J	0.50	0.060	mg/L			12/22/15 14:55	1
Sulfate	5.8		5.0	0.23	mg/L			12/22/15 14:55	1
Total Dissolved Solids (TDS)	980		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	12		4.0	1.1	mg/L			12/15/15 15:32	1

Client Sample ID: MW-11
Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.48	HF	0.100	0.100	SU			12/17/15 00:29	1
Temperature	23.7	HF	1.00	1.00	Degrees C			12/17/15 00:29	1
Chloride	86		3.0	0.25	mg/L			12/22/15 15:12	1
Fluoride	2.4		0.50	0.060	mg/L			12/22/15 15:12	1
Sulfate	960		50	2.3	mg/L			12/22/15 21:21	10
Total Dissolved Solids (TDS)	1900		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	3.2	J	4.0	1.1	mg/L			12/16/15 15:32	1

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.81	HF	0.100	0.100	SU			12/17/15 00:24	1

General Chemistry (Continued)

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	23.5	HF	1.00	1.00	Degrees C			12/17/15 00:24	1
Chloride	61		3.0	0.25	mg/L			12/22/15 15:29	1
Fluoride	3.6		0.50	0.060	mg/L			12/22/15 15:29	1
Sulfate	590		50	2.3	mg/L			12/22/15 21:38	10
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			12/16/15 15:32	1

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.79	HF	0.100	0.100	SU			12/16/15 23:54	1
Temperature	23.0	HF	1.00	1.00	Degrees C			12/16/15 23:54	1
Chloride	55		3.0	0.25	mg/L			12/22/15 16:51	1
Fluoride	2.9		0.50	0.060	mg/L			12/22/15 16:51	1
Sulfate	520		25	1.2	mg/L			12/22/15 22:28	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	20		4.0	1.1	mg/L			12/16/15 15:32	1

Client Sample ID: PLANT MW-1
Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.68	HF	0.100	0.100	SU			12/17/15 00:19	1
Temperature	23.5	HF	1.00	1.00	Degrees C			12/17/15 00:19	1
Chloride	78		3.0	0.25	mg/L			12/22/15 17:08	1
Fluoride	0.91		0.50	0.060	mg/L			12/22/15 17:08	1
Sulfate	85		5.0	0.23	mg/L			12/22/15 17:08	1
Total Dissolved Solids (TDS)	570		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	9.2		4.0	1.1	mg/L			12/16/15 15:32	1

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.69	HF	0.100	0.100	SU			12/16/15 23:42	1
Temperature	22.9	HF	1.00	1.00	Degrees C			12/16/15 23:42	1
Chloride	560		150	13	mg/L			12/22/15 22:45	50
Fluoride	2.9		1.0	0.12	mg/L			12/22/15 17:25	2
Sulfate	5700		250	12	mg/L			12/22/15 22:45	50
Total Dissolved Solids (TDS)	9500	E	40	19	mg/L			12/14/15 15:05	1
Total Suspended Solids	570		20	5.5	mg/L			12/16/15 15:32	1

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.36	HF	0.100	0.100	SU			12/17/15 00:07	1
Temperature	23.5	HF	1.00	1.00	Degrees C			12/17/15 00:07	1
Chloride	43		3.0	0.25	mg/L			12/22/15 17:41	1

General Chemistry (Continued)

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.060	mg/L			12/22/15 17:41	1
Sulfate	**2400**		100	4.6	mg/L			12/22/15 23:02	20
Total Dissolved Solids (TDS)	**3900**		40	19	mg/L			12/17/15 17:08	1
Total Suspended Solids	ND		4.0	1.1	mg/L			12/16/15 12:01	1

Client Sample ID: MW-12D
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.22**	**HF**	0.100	0.100	SU			12/17/15 00:02	1
Temperature	**23.5**	**HF**	1.00	1.00	Degrees C			12/17/15 00:02	1
Chloride	**38**		3.0	0.25	mg/L			12/22/15 17:58	1
Fluoride	**0.47**	**J**	0.50	0.060	mg/L			12/22/15 17:58	1
Sulfate	**5.5**		5.0	0.23	mg/L			12/22/15 17:58	1
Total Dissolved Solids (TDS)	**980**		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	**11**		4.0	1.1	mg/L			12/15/15 15:32	1

Client Sample ID: MW-12EB
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**5.76**	**HF**	0.100	0.100	SU			12/17/15 19:25	1
Temperature	**17.0**	**HF**	1.00	1.00	Degrees C			12/17/15 19:25	1
Chloride	ND		3.0	0.25	mg/L			12/22/15 18:49	1
Fluoride	ND		0.50	0.060	mg/L			12/22/15 18:49	1
Sulfate	**0.59**	**J**	5.0	0.23	mg/L			12/22/15 18:49	1
Total Dissolved Solids (TDS)	**19**		10	4.7	mg/L			12/14/15 15:05	1
Total Suspended Solids	ND		4.0	1.1	mg/L			12/15/15 15:32	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-12
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.133	U	0.139	0.140	1.00	0.226	pCi/L	01/15/16 14:32	02/08/16 20:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*40 - 110*	*01/15/16 14:32*	*02/08/16 20:22*	*1*

Client Sample ID: MW-11
Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.246**		0.124	0.126	1.00	0.156	pCi/L	02/24/16 16:23	02/08/16 20:22	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	02/24/16 16:23	02/08/16 20:22	1

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.262		0.158	0.159	1.00	0.229	pCi/L	01/15/16 14:32	02/08/16 20:22	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	01/15/16 14:32	02/08/16 20:22	1

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.288		0.143	0.145	1.00	0.189	pCi/L	01/15/16 14:32	02/08/16 20:22	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.3		40 - 110	01/15/16 14:32	02/08/16 20:22	1

Client Sample ID: PLANT MW-1
Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.187	U	0.141	0.142	1.00	0.213	pCi/L	01/15/16 14:32	02/08/16 20:22	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.6		40 - 110	01/15/16 14:32	02/08/16 20:22	1

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.395		0.264	0.266	1.00	0.387	pCi/L	01/15/16 14:32	02/09/16 12:51	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.6		40 - 110	01/15/16 14:32	02/09/16 12:51	1

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.454		0.177	0.182	1.00	0.225	pCi/L	01/15/16 14:32	02/09/16 16:21	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.7		40 - 110	01/15/16 14:32	02/09/16 16:21	1

Client Sample ID: MW-12D — **Lab Sample ID: 280-77926-8**
Date Collected: 12/08/15 16:00 — **Matrix: Water**
Date Received: 12/11/15 08:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.249		0.160	0.162	1.00	0.233	pCi/L	01/15/16 14:32	02/09/16 16:21	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	72.6		40 - 110	01/15/16 14:32	02/09/16 16:21	1

Client Sample ID: MW-12EB — **Lab Sample ID: 280-77926-9**
Date Collected: 12/08/15 16:00 — **Matrix: Water**
Date Received: 12/11/15 08:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0163	U	0.0402	0.0402	1.00	0.0729	pCi/L	12/21/15 15:19	01/12/16 07:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		40 - 110	12/21/15 15:19	01/12/16 07:04	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-12 — **Lab Sample ID: 280-77926-1**
Date Collected: 12/08/15 16:00 — **Matrix: Water**
Date Received: 12/11/15 08:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.781		0.476	0.481	1.00	0.722	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		40 - 110	01/15/16 14:32	02/02/16 21:00	1
Y Carrier	84.9		40 - 110	01/15/16 14:32	02/02/16 21:00	1

Client Sample ID: MW-11 — **Lab Sample ID: 280-77926-2**
Date Collected: 12/09/15 09:25 — **Matrix: Water**
Date Received: 12/11/15 08:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.600	U	0.445	0.448	1.00	0.695	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	82.9		40 - 110	01/15/16 14:32	02/02/16 21:00	1
Y Carrier	95.3		40 - 110	01/15/16 14:32	02/02/16 21:00	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.412	U	0.393	0.395	1.00	0.634	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*
Y Carrier	*90.8*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.286	U	0.455	0.456	1.00	0.765	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*
Y Carrier	*89.7*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*

Client Sample ID: PLANT MW-1
Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.774**		0.481	0.486	1.00	0.731	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.6*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.984	U G	0.836	0.841	1.00	1.33	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*
Y Carrier	*90.1*		*40 - 110*	*01/15/16 14:32*	*02/02/16 21:00*	*1*

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.46**		0.526	0.543	1.00	0.718	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.7		40 - 110	01/15/16 14:32	02/02/16 21:00	1
Y Carrier	90.8		40 - 110	01/15/16 14:32	02/02/16 21:00	1

Client Sample ID: MW-12D
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.48**		0.629	0.644	1.00	0.896	pCi/L	01/15/16 14:32	02/02/16 21:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	72.6		40 - 110	01/15/16 14:32	02/02/16 21:00	1
Y Carrier	89.7		40 - 110	01/15/16 14:32	02/02/16 21:00	1

Client Sample ID: MW-12EB
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0118	U	0.248	0.248	1.00	0.446	pCi/L	12/21/15 15:19	12/24/15 18:29	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		40 - 110	12/21/15 15:19	12/24/15 18:29	1
Y Carrier	94.4		40 - 110	12/21/15 15:19	12/24/15 18:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-12
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.914**		0.496	0.501	5.00	0.722	pCi/L		02/25/16 22:02	1

Client Sample ID: MW-11
Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.847**		0.462	0.466	5.00	0.695	pCi/L		02/25/16 22:02	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.674		0.423	0.426	5.00	0.634	pCi/L		02/25/16 22:02	1

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.574	U	0.477	0.478	5.00	0.765	pCi/L		02/25/16 22:02	1

Client Sample ID: PLANT MW-1
Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.961		0.501	0.506	5.00	0.731	pCi/L		02/25/16 22:02	1

Client Sample ID: MW-4
Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.38		0.877	0.882	5.00	1.33	pCi/L		02/25/16 22:02	1

Client Sample ID: MW-3
Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.92		0.555	0.573	5.00	0.718	pCi/L		02/25/16 22:02	1

Client Sample ID: MW-12D
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.73		0.650	0.664	5.00	0.896	pCi/L		02/25/16 22:02	1

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-12EB
Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.00445	U	0.252	0.252	5.00	0.446	pCi/L		02/25/16 22:02	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-211228/1-A
Matrix: Water
Analysis Batch: 211721

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		12/17/15 07:43	12/18/15 14:40	1
Barium	ND		0.0050	0.0011	mg/L		12/17/15 07:43	12/18/15 14:40	1
Beryllium	0.0000770	J	0.0010	0.000053	mg/L		12/17/15 07:43	12/18/15 14:40	1
Calcium	ND		1.0	0.24	mg/L		12/17/15 07:43	12/18/15 14:40	1
Cadmium	ND		0.0010	0.000061	mg/L		12/17/15 07:43	12/18/15 14:40	1
Cobalt	0.0000220	J	0.0010	0.000021	mg/L		12/17/15 07:43	12/18/15 14:40	1
Chromium	ND		0.0020	0.00060	mg/L		12/17/15 07:43	12/18/15 14:40	1
Lead	ND		0.0010	0.00011	mg/L		12/17/15 07:43	12/18/15 14:40	1
Selenium	ND		0.0050	0.00025	mg/L		12/17/15 07:43	12/18/15 14:40	1
Thallium	ND		0.0010	0.000074	mg/L		12/17/15 07:43	12/18/15 14:40	1

Lab Sample ID: LCS 240-211228/2-A
Matrix: Water
Analysis Batch: 211721

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0826		mg/L		83	80 - 120
Barium	1.00	0.917		mg/L		92	80 - 120
Beryllium	1.00	0.976		mg/L		98	80 - 120
Calcium	10.0	10.1		mg/L		101	80 - 120
Cadmium	1.00	0.946		mg/L		95	80 - 120
Cobalt	1.00	0.963		mg/L		96	80 - 120
Chromium	1.00	0.907		mg/L		91	80 - 120
Lead	1.00	0.987		mg/L		99	80 - 120
Selenium	1.00	0.911		mg/L		91	80 - 120
Thallium	0.250	0.241		mg/L		96	80 - 120

Lab Sample ID: 280-77926-1 MS
Matrix: Water
Analysis Batch: 211721

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211228

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00068	J	0.100	0.0944		mg/L		94	75 - 125
Barium	0.17		1.00	1.16		mg/L		99	75 - 125
Beryllium	0.00053	J B	1.00	1.01		mg/L		101	75 - 125
Calcium	180		10.0	193	4	mg/L		109	75 - 125
Cadmium	0.00031	J	1.00	0.970		mg/L		97	75 - 125
Cobalt	0.018	B	1.00	0.997		mg/L		98	75 - 125
Chromium	0.00061	J	1.00	0.967		mg/L		97	75 - 125
Lead	0.0018		1.00	0.976		mg/L		97	75 - 125
Selenium	0.00092	J	1.00	0.973		mg/L		97	75 - 125
Thallium	0.00015	J	0.250	0.237		mg/L		95	75 - 125

Lab Sample ID: 280-77926-1 MSD
Matrix: Water
Analysis Batch: 211721

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211228

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00068	J	0.100	0.0945		mg/L		94	75 - 125	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-77926-1 MSD
Matrix: Water
Analysis Batch: 211721

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211228

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.17		1.00	1.18		mg/L		100	75 - 125	1	20
Beryllium	0.00053	J B	1.00	1.03		mg/L		103	75 - 125	1	20
Calcium	180		10.0	197	4	mg/L		147	75 - 125	2	20
Cadmium	0.00031	J	1.00	0.978		mg/L		98	75 - 125	1	20
Cobalt	0.018	B	1.00	1.01		mg/L		99	75 - 125	1	20
Chromium	0.00061	J	1.00	0.973		mg/L		97	75 - 125	1	20
Lead	0.0018		1.00	0.991		mg/L		99	75 - 125	2	20
Selenium	0.00092	J	1.00	0.972		mg/L		97	75 - 125	0	20
Thallium	0.00015	J	0.250	0.242		mg/L		97	75 - 125	2	20

Lab Sample ID: MB 240-211754/1-A
Matrix: Water
Analysis Batch: 212003

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00049	mg/L		12/21/15 10:26	12/22/15 12:10	1
Molybdenum	ND		0.010	0.00023	mg/L		12/21/15 10:26	12/22/15 12:10	1
Boron	ND		0.020	0.011	mg/L		12/21/15 10:26	12/22/15 12:10	1
Lithium	ND		0.0080	0.00029	mg/L		12/21/15 10:26	12/22/15 12:10	1

Lab Sample ID: MB 240-211754/1-A
Matrix: Water
Analysis Batch: 212572

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0080	0.00029	mg/L		12/21/15 10:26	12/29/15 12:41	1

Lab Sample ID: LCS 240-211754/2-A
Matrix: Water
Analysis Batch: 212003

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.954		mg/L		95	80 - 120
Molybdenum	0.100	0.0961		mg/L		96	80 - 120
Boron	0.100	0.0969		mg/L		97	80 - 120
Lithium	0.100	0.0975		mg/L		97	80 - 120

Lab Sample ID: LCS 240-211754/2-A
Matrix: Water
Analysis Batch: 212572

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.100	0.0935		mg/L		93	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-77926-1 MS
Matrix: Water
Analysis Batch: 212003

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	4.3		0.100	4.19	4	mg/L		-60	75 - 125

Lab Sample ID: 280-77926-1 MS
Matrix: Water
Analysis Batch: 212247

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0024	J	1.00	1.01		mg/L		101	75 - 125
Molybdenum	0.0050	J	0.100	0.107		mg/L		102	75 - 125

Lab Sample ID: 280-77926-1 MS
Matrix: Water
Analysis Batch: 212572

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0030	J	0.100	0.0967		mg/L		94	75 - 125

Lab Sample ID: 280-77926-1 MSD
Matrix: Water
Analysis Batch: 212003

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	4.3		0.100	4.39	4	mg/L		140	75 - 125	5	20

Lab Sample ID: 280-77926-1 MSD
Matrix: Water
Analysis Batch: 212247

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0024	J	1.00	1.01		mg/L		101	75 - 125	0	20
Molybdenum	0.0050	J	0.100	0.109		mg/L		104	75 - 125	2	20

Lab Sample ID: 280-77926-1 MSD
Matrix: Water
Analysis Batch: 212572

Client Sample ID: MW-12
Prep Type: Total Recoverable
Prep Batch: 211754

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0030	J	0.100	0.0972		mg/L		94	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-307895/1-A
Matrix: Water
Analysis Batch: 308083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/16/15 10:30	12/16/15 17:48	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 280-307895/2-A
Matrix: Water
Analysis Batch: 308083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.13		ug/L		103	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-308088/27
Matrix: Water
Analysis Batch: 308088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.050		SU		101	99 - 101

Lab Sample ID: LCS 280-308207/4
Matrix: Water
Analysis Batch: 308207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.020		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-308572/6
Matrix: Water
Analysis Batch: 308572

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			12/22/15 10:43	1
Fluoride	ND		0.50	0.060	mg/L			12/22/15 10:43	1
Sulfate	ND		5.0	0.23	mg/L			12/22/15 10:43	1

Lab Sample ID: LCS 280-308572/4
Matrix: Water
Analysis Batch: 308572

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.1		mg/L		99	90 - 110
Fluoride	5.00	5.14		mg/L		103	90 - 110
Sulfate	100	98.4		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-308572/5
Matrix: Water
Analysis Batch: 308572

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.3		mg/L		99	90 - 110	0	10
Fluoride	5.00	5.16		mg/L		103	90 - 110	0	10
Sulfate	100	98.3		mg/L		98	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-308572/3
Matrix: Water
Analysis Batch: 308572

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.50	J	mg/L		100	50 - 150
Fluoride	0.200	0.175	J	mg/L		87	50 - 150
Sulfate	2.50	2.72	J	mg/L		109	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-307721/1
Matrix: Water
Analysis Batch: 307721

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/14/15 15:05	1

Lab Sample ID: LCS 280-307721/2
Matrix: Water
Analysis Batch: 307721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	485		mg/L		97	86 - 110

Lab Sample ID: 280-77926-8 DU
Matrix: Water
Analysis Batch: 307721

Client Sample ID: MW-12D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	980		995		mg/L		1	10

Lab Sample ID: MB 280-308170/1
Matrix: Water
Analysis Batch: 308170

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/17/15 17:08	1

Lab Sample ID: LCS 280-308170/2
Matrix: Water
Analysis Batch: 308170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	484		mg/L		97	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-307839/2
Matrix: Water
Analysis Batch: 307839

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/15/15 15:32	1

Lab Sample ID: LCS 280-307839/1
Matrix: Water
Analysis Batch: 307839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			100	92.0		mg/L		92	86 - 114		

Lab Sample ID: MB 280-307952/1
Matrix: Water
Analysis Batch: 307952

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/16/15 12:01	1

Lab Sample ID: LCS 280-307952/2
Matrix: Water
Analysis Batch: 307952

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			100	90.0		mg/L		90	86 - 114		

Lab Sample ID: LCSD 280-307952/3
Matrix: Water
Analysis Batch: 307952

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids			100	85.6		mg/L		86	86 - 114	5	20

Lab Sample ID: MB 280-307982/2
Matrix: Water
Analysis Batch: 307982

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/16/15 15:32	1

Lab Sample ID: LCS 280-307982/1
Matrix: Water
Analysis Batch: 307982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			100	93.6		mg/L		94	86 - 114		

Lab Sample ID: 280-77926-4 DU
Matrix: Water
Analysis Batch: 307982

Client Sample ID: MW-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	20			18.0		mg/L				9	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-228569/1-A
Matrix: Water
Analysis Batch: 231800

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 228569

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03573	U	0.0337	0.0339	1.00	0.0520	pCi/L	12/21/15 15:19	01/12/16 07:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*12/21/15 15:19*	*01/12/16 07:04*	*1*

Lab Sample ID: LCS 160-228569/2-A
Matrix: Water
Analysis Batch: 231800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 228569

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	10.40		1.01	1.00	0.0648	pCi/L	93	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.0*		*40 - 110*

Lab Sample ID: MB 160-232622/1-A
Matrix: Water
Analysis Batch: 237239

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 232622

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01823	U	0.0701	0.0702	1.00	0.150	pCi/L	01/15/16 14:32	02/08/16 16:37	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*01/15/16 14:32*	*02/08/16 16:37*	*1*

Lab Sample ID: LCS 160-232622/2-A
Matrix: Water
Analysis Batch: 237239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 232622

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			22.3	24.93		2.45	1.00	0.229	pCi/L	112	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.4*		*40 - 110*

Lab Sample ID: LCSD 160-232622/3-A
Matrix: Water
Analysis Batch: 237239

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 232622

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			22.3	24.74		2.43	1.00	0.193	pCi/L	111	68 - 137	0.04	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-232622/3-A
Matrix: Water
Analysis Batch: 237239

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 232622

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	94.3		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-228567/1-A
Matrix: Water
Analysis Batch: 229532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 228567

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09709	U	0.218	0.218	1.00	0.373	pCi/L	12/21/15 15:19	12/24/15 18:29	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110	12/21/15 15:19	12/24/15 18:29	1
Y Carrier	83.9		40 - 110	12/21/15 15:19	12/24/15 18:29	1

Lab Sample ID: LCS 160-228567/2-A
Matrix: Water
Analysis Batch: 229532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 228567

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			3.18	1.833		0.365	1.00	0.348	pCi/L	58	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	93.0		40 - 110
Y Carrier	99.3		40 - 110

Lab Sample ID: MB 160-232627/1-A
Matrix: Water
Analysis Batch: 235705

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 232627

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.7207	U	0.474	0.479	1.00	0.740	pCi/L	01/15/16 14:32	02/02/16 20:56	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	01/15/16 14:32	02/02/16 20:56	1
Y Carrier	93.1		40 - 110	01/15/16 14:32	02/02/16 20:56	1

Lab Sample ID: LCS 160-232627/2-A
Matrix: Water
Analysis Batch: 235705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 232627

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			6.27	6.620		1.04	1.00	0.777	pCi/L	106	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.4		40 - 110
Y Carrier	88.6		40 - 110

Lab Sample ID: LCSD 160-232627/3-A
Matrix: Water
Analysis Batch: 235705

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 232627

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			6.27	5.935		0.958	1.00	0.749	pCi/L	95	56 - 140	0.34	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	94.3		40 - 110
Y Carrier	92.7		40 - 110

Metals

Prep Batch: 211228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total Recoverable	Water	3005A	
280-77926-1 MS	MW-12	Total Recoverable	Water	3005A	
280-77926-1 MSD	MW-12	Total Recoverable	Water	3005A	
280-77926-2	MW-11	Total Recoverable	Water	3005A	
280-77926-3	MW-10	Total Recoverable	Water	3005A	
280-77926-4	MW-9	Total Recoverable	Water	3005A	
280-77926-5	PLANT MW-1	Total Recoverable	Water	3005A	
280-77926-6	MW-4	Total Recoverable	Water	3005A	
280-77926-7	MW-3	Total Recoverable	Water	3005A	
280-77926-8	MW-12D	Total Recoverable	Water	3005A	
280-77926-9	MW-12EB	Total Recoverable	Water	3005A	
LCS 240-211228/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-211228/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 211721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total Recoverable	Water	6020A	211228
280-77926-1 MS	MW-12	Total Recoverable	Water	6020A	211228
280-77926-1 MSD	MW-12	Total Recoverable	Water	6020A	211228
280-77926-2	MW-11	Total Recoverable	Water	6020A	211228
280-77926-3	MW-10	Total Recoverable	Water	6020A	211228
280-77926-4	MW-9	Total Recoverable	Water	6020A	211228
280-77926-5	PLANT MW-1	Total Recoverable	Water	6020A	211228
280-77926-6	MW-4	Total Recoverable	Water	6020A	211228
280-77926-7	MW-3	Total Recoverable	Water	6020A	211228
280-77926-8	MW-12D	Total Recoverable	Water	6020A	211228
280-77926-9	MW-12EB	Total Recoverable	Water	6020A	211228
LCS 240-211228/2-A	Lab Control Sample	Total Recoverable	Water	6020A	211228
MB 240-211228/1-A	Method Blank	Total Recoverable	Water	6020A	211228

Prep Batch: 211754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total Recoverable	Water	3005A	
280-77926-1 MS	MW-12	Total Recoverable	Water	3005A	
280-77926-1 MSD	MW-12	Total Recoverable	Water	3005A	
280-77926-2	MW-11	Total Recoverable	Water	3005A	
280-77926-3	MW-10	Total Recoverable	Water	3005A	
280-77926-4	MW-9	Total Recoverable	Water	3005A	
280-77926-5	PLANT MW-1	Total Recoverable	Water	3005A	
280-77926-6	MW-4	Total Recoverable	Water	3005A	
280-77926-7	MW-3	Total Recoverable	Water	3005A	
280-77926-8	MW-12D	Total Recoverable	Water	3005A	
280-77926-9	MW-12EB	Total Recoverable	Water	3005A	
LCS 240-211754/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-211754/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 212003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total Recoverable	Water	6020A	211754
280-77926-1 MS	MW-12	Total Recoverable	Water	6020A	211754
280-77926-1 MSD	MW-12	Total Recoverable	Water	6020A	211754

Metals (Continued)

Analysis Batch: 212003 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-2	MW-11	Total Recoverable	Water	6020A	211754
280-77926-3	MW-10	Total Recoverable	Water	6020A	211754
280-77926-4	MW-9	Total Recoverable	Water	6020A	211754
280-77926-5	PLANT MW-1	Total Recoverable	Water	6020A	211754
280-77926-6	MW-4	Total Recoverable	Water	6020A	211754
280-77926-7	MW-3	Total Recoverable	Water	6020A	211754
280-77926-8	MW-12D	Total Recoverable	Water	6020A	211754
280-77926-9	MW-12EB	Total Recoverable	Water	6020A	211754
LCS 240-211754/2-A	Lab Control Sample	Total Recoverable	Water	6020A	211754
MB 240-211754/1-A	Method Blank	Total Recoverable	Water	6020A	211754

Analysis Batch: 212247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total Recoverable	Water	6020A	211754
280-77926-1 MS	MW-12	Total Recoverable	Water	6020A	211754
280-77926-1 MSD	MW-12	Total Recoverable	Water	6020A	211754
280-77926-2	MW-11	Total Recoverable	Water	6020A	211754
280-77926-3	MW-10	Total Recoverable	Water	6020A	211754
280-77926-4	MW-9	Total Recoverable	Water	6020A	211754
280-77926-5	PLANT MW-1	Total Recoverable	Water	6020A	211754
280-77926-6	MW-4	Total Recoverable	Water	6020A	211754
280-77926-7	MW-3	Total Recoverable	Water	6020A	211754
280-77926-8	MW-12D	Total Recoverable	Water	6020A	211754

Analysis Batch: 212572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total Recoverable	Water	6020A	211754
280-77926-1 MS	MW-12	Total Recoverable	Water	6020A	211754
280-77926-1 MSD	MW-12	Total Recoverable	Water	6020A	211754
280-77926-2	MW-11	Total Recoverable	Water	6020A	211754
280-77926-3	MW-10	Total Recoverable	Water	6020A	211754
280-77926-4	MW-9	Total Recoverable	Water	6020A	211754
280-77926-5	PLANT MW-1	Total Recoverable	Water	6020A	211754
280-77926-6	MW-4	Total Recoverable	Water	6020A	211754
280-77926-7	MW-3	Total Recoverable	Water	6020A	211754
280-77926-8	MW-12D	Total Recoverable	Water	6020A	211754
LCS 240-211754/2-A	Lab Control Sample	Total Recoverable	Water	6020A	211754
MB 240-211754/1-A	Method Blank	Total Recoverable	Water	6020A	211754

Prep Batch: 307895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	7470A	
280-77926-2	MW-11	Total/NA	Water	7470A	
280-77926-3	MW-10	Total/NA	Water	7470A	
280-77926-4	MW-9	Total/NA	Water	7470A	
280-77926-5	PLANT MW-1	Total/NA	Water	7470A	
280-77926-6	MW-4	Total/NA	Water	7470A	
280-77926-7	MW-3	Total/NA	Water	7470A	
280-77926-8	MW-12D	Total/NA	Water	7470A	
280-77926-9	MW-12EB	Total/NA	Water	7470A	
LCS 280-307895/2-A	Lab Control Sample	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 307895 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-307895/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 308083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	7470A	307895
280-77926-2	MW-11	Total/NA	Water	7470A	307895
280-77926-3	MW-10	Total/NA	Water	7470A	307895
280-77926-4	MW-9	Total/NA	Water	7470A	307895
280-77926-5	PLANT MW-1	Total/NA	Water	7470A	307895
280-77926-6	MW-4	Total/NA	Water	7470A	307895
280-77926-7	MW-3	Total/NA	Water	7470A	307895
280-77926-8	MW-12D	Total/NA	Water	7470A	307895
280-77926-9	MW-12EB	Total/NA	Water	7470A	307895
LCS 280-307895/2-A	Lab Control Sample	Total/NA	Water	7470A	307895
MB 280-307895/1-A	Method Blank	Total/NA	Water	7470A	307895

General Chemistry

Analysis Batch: 307721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	SM 2540C	
280-77926-2	MW-11	Total/NA	Water	SM 2540C	
280-77926-3	MW-10	Total/NA	Water	SM 2540C	
280-77926-4	MW-9	Total/NA	Water	SM 2540C	
280-77926-5	PLANT MW-1	Total/NA	Water	SM 2540C	
280-77926-6	MW-4	Total/NA	Water	SM 2540C	
280-77926-8	MW-12D	Total/NA	Water	SM 2540C	
280-77926-8 DU	MW-12D	Total/NA	Water	SM 2540C	
280-77926-9	MW-12EB	Total/NA	Water	SM 2540C	
LCS 280-307721/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-307721/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 307839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	SM 2540D	
280-77926-8	MW-12D	Total/NA	Water	SM 2540D	
280-77926-9	MW-12EB	Total/NA	Water	SM 2540D	
LCS 280-307839/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-307839/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 307952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-7	MW-3	Total/NA	Water	SM 2540D	
LCS 280-307952/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-307952/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
MB 280-307952/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 307982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-2	MW-11	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 307982 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-3	MW-10	Total/NA	Water	SM 2540D	
280-77926-4	MW-9	Total/NA	Water	SM 2540D	
280-77926-4 DU	MW-9	Total/NA	Water	SM 2540D	
280-77926-5	PLANT MW-1	Total/NA	Water	SM 2540D	
280-77926-6	MW-4	Total/NA	Water	SM 2540D	
LCS 280-307982/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-307982/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 308088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	9040B	
280-77926-2	MW-11	Total/NA	Water	9040B	
280-77926-3	MW-10	Total/NA	Water	9040B	
280-77926-4	MW-9	Total/NA	Water	9040B	
280-77926-5	PLANT MW-1	Total/NA	Water	9040B	
280-77926-6	MW-4	Total/NA	Water	9040B	
280-77926-7	MW-3	Total/NA	Water	9040B	
280-77926-8	MW-12D	Total/NA	Water	9040B	
LCS 280-308088/27	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 308170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-7	MW-3	Total/NA	Water	SM 2540C	
LCS 280-308170/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-308170/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 308207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-9	MW-12EB	Total/NA	Water	9040B	
LCS 280-308207/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 308572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	9056A	
280-77926-2	MW-11	Total/NA	Water	9056A	
280-77926-2	MW-11	Total/NA	Water	9056A	
280-77926-3	MW-10	Total/NA	Water	9056A	
280-77926-3	MW-10	Total/NA	Water	9056A	
280-77926-4	MW-9	Total/NA	Water	9056A	
280-77926-4	MW-9	Total/NA	Water	9056A	
280-77926-5	PLANT MW-1	Total/NA	Water	9056A	
280-77926-6	MW-4	Total/NA	Water	9056A	
280-77926-6	MW-4	Total/NA	Water	9056A	
280-77926-7	MW-3	Total/NA	Water	9056A	
280-77926-7	MW-3	Total/NA	Water	9056A	
280-77926-8	MW-12D	Total/NA	Water	9056A	
280-77926-9	MW-12EB	Total/NA	Water	9056A	
LCS 280-308572/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-308572/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-308572/6	Method Blank	Total/NA	Water	9056A	
MRL 280-308572/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 228567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-9	MW-12EB	Total/NA	Water	PrecSep_0	
LCS 160-228567/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-228567/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 228569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-9	MW-12EB	Total/NA	Water	PrecSep-21	
LCS 160-228569/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-228569/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 232622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	PrecSep-21	
280-77926-2	MW-11	Total/NA	Water	PrecSep-21	
280-77926-3	MW-10	Total/NA	Water	PrecSep-21	
280-77926-4	MW-9	Total/NA	Water	PrecSep-21	
280-77926-5	PLANT MW-1	Total/NA	Water	PrecSep-21	
280-77926-6	MW-4	Total/NA	Water	PrecSep-21	
280-77926-7	MW-3	Total/NA	Water	PrecSep-21	
280-77926-8	MW-12D	Total/NA	Water	PrecSep-21	
LCS 160-232622/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-232622/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-232622/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 232627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-77926-1	MW-12	Total/NA	Water	PrecSep_0	
280-77926-2	MW-11	Total/NA	Water	PrecSep_0	
280-77926-3	MW-10	Total/NA	Water	PrecSep_0	
280-77926-4	MW-9	Total/NA	Water	PrecSep_0	
280-77926-5	PLANT MW-1	Total/NA	Water	PrecSep_0	
280-77926-6	MW-4	Total/NA	Water	PrecSep_0	
280-77926-7	MW-3	Total/NA	Water	PrecSep_0	
280-77926-8	MW-12D	Total/NA	Water	PrecSep_0	
LCS 160-232627/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-232627/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-232627/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: MW-12

Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 14:48	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		50	50 mL	50 mL	212003	12/22/15 12:18	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 12:17	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 12:49	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:04	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/17/15 00:34	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 14:55	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307839	12/15/15 15:32	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			499.64 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	499.64 mL		237239	02/08/16 20:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.64 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	499.64 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-11

Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:08	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		40	50 mL	50 mL	212003	12/22/15 12:34	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 12:37	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:09	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:06	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/17/15 00:29	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 15:12	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	308572	12/22/15 21:21	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307982	12/16/15 15:32	MW1	TAL DEN
Total/NA	Analysis	9315		1	500.85 mL		237239	02/08/16 20:22	RTM	TAL SL
Total/NA	Prep	PrecSep-21			500.85 mL	1.0 g	232622	02/24/16 16:23	SCB	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: MW-11
Date Collected: 12/09/15 09:25
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			500.85 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	500.85 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-10
Date Collected: 12/09/15 11:15
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:12	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		200	50 mL	50 mL	212003	12/22/15 12:38	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 12:41	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:13	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:13	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/17/15 00:24	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 15:29	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	308572	12/22/15 21:38	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307982	12/16/15 15:32	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			499.21 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	499.21 mL		237239	02/08/16 20:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.21 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	499.21 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-9
Date Collected: 12/09/15 13:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:16	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		200	50 mL	50 mL	212003	12/22/15 12:42	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 12:45	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:17	AS1	TAL CAN

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:15	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/16/15 23:54	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 16:51	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	308572	12/22/15 22:28	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307982	12/16/15 15:32	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			499.87 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	499.87 mL		237239	02/08/16 20:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.87 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	499.87 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: PLANT MW-1

Date Collected: 12/09/15 14:50
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:28	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	212003	12/22/15 12:46	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 12:49	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:29	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:18	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/17/15 00:19	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 17:08	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307982	12/16/15 15:32	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			500.95 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	500.95 mL		237239	02/08/16 20:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.95 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	500.95 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-4

Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:32	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: MW-4

Date Collected: 12/09/15 17:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	212003	12/22/15 12:59	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 12:53	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:33	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:20	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/16/15 23:42	MAS	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	308572	12/22/15 17:25	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	308572	12/22/15 22:45	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	50 mL	250 mL	307982	12/16/15 15:32	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			250.86 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	250.86 mL		237353	02/09/16 12:51	RTM	TAL SL
Total/NA	Prep	PrecSep_0			250.86 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	250.86 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-3

Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:35	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	212003	12/22/15 13:04	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 13:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:37	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:22	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/17/15 00:07	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 17:41	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	308572	12/22/15 23:02	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	308170	12/17/15 17:08	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307952	12/16/15 12:01	CML	TAL DEN
Total/NA	Prep	PrecSep-21			500.19 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	500.19 mL		237353	02/09/16 16:21	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.19 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	500.19 mL		235691	02/02/16 21:00	ALS	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: MW-3

Date Collected: 12/10/15 11:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-12D

Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:39	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		50	50 mL	50 mL	212003	12/22/15 13:08	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212247	12/23/15 13:08	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 13:41	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:24	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308088	12/17/15 00:02	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 17:58	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307839	12/15/15 15:32	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			502.38 mL	1.0 g	232622	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9315		1	502.38 mL		237353	02/09/16 16:21	RTM	TAL SL
Total/NA	Prep	PrecSep_0			502.38 mL	1.0 g	232627	01/15/16 14:32	SCB	TAL SL
Total/NA	Analysis	9320		1	502.38 mL		235691	02/02/16 21:00	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Client Sample ID: MW-12EB

Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211228	12/17/15 07:43	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211721	12/18/15 15:43	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211754	12/21/15 10:26	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212003	12/22/15 13:28	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	307895	12/16/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308083	12/16/15 18:27	CDH	TAL DEN
Total/NA	Analysis	9040B		1		1 mL	308207	12/17/15 19:25	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308572	12/22/15 18:49	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	307721	12/14/15 15:05	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	307839	12/15/15 15:32	MW1	TAL DEN

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Client Sample ID: MW-12EB

Date Collected: 12/08/15 16:00
Date Received: 12/11/15 08:00

Lab Sample ID: 280-77926-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			887.03 mL	1.0 g	228569	12/21/15 15:19	SCB	TAL SL
Total/NA	Analysis	9315		1	887.03 mL		231800	01/12/16 07:04	ALS	TAL SL
Total/NA	Prep	PrecSep_0			887.03 mL	1.0 g	228567	12/21/15 15:19	SCB	TAL SL
Total/NA	Analysis	9320		1	887.03 mL		229532	12/24/15 18:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			238029	02/25/16 22:02	CAH	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Illinois	NELAP	5	200004	07-31-16
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-26-16 *
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16
New Jersey	NELAP	2	OH001	06-30-16
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-16 *
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-16 *
West Virginia DEP	State Program	3	210	12-31-15 *
Wisconsin	State Program	5	999518190	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-16 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-77926 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: L. Spencer	Lab PM: Kupper, Stephanie	COC No:
Client Contact: ~~Lynn Lutz~~ Anna Lundin	Phone: 907.440.4274	E-Mail: stephanie.kupper@	Page: Page ___ of ___
Company: HDR Inc			Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:		
City: Englewood	TAT Requested (days): Standard		
State, Zip: CO, 80112			
Phone: ~~720-883-2300(Tel)~~ 303-351-2139	PO #: Purchase Order Requested		
Email: ~~Lynn.Lutz@hdrinc.com~~ Anna.Lundin@hdrinc.com	WO #:		
Project Name: Valmont	Project #: 28014230		
Site: Plant MW-1 MW-12 MW12D MW-12EB, MW-11, MW-10 MW-9, MW-4, MW-3	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS) N	2540C - Total Dissolved Solids (TDS) D	Metals (12) - 6020A, Mercury - 7470A - TA Canton N	Metals (12) - 6020A, Mercury - 7470A - TA Canton D	pH - 9040B, Anions - 9056A N	2540D - Total Suspended Solids N	2540D - Total Suspended Solids D	Radium - 9315_Ra226, 9320_Ra228 - TA St. Louis N	Radium - 9315_Ra226, 9320_Ra228 - TA St. Louis D	Metals - (Boron and Calcium) - TA Canton N	Metals - (Boron and Calcium) - TA Canton D	Total Number of containers	Special Instructions/Note:
			Preservation Code:																
MW-12	12/8/15	1600	G	Water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-11	12/9/15	0925	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-10	12/9/15	1115	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-9	12/9/15	1300	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
Plant MW-1	12/9/15	1450	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-4	12/9/15	1700	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-3	12/10/15	1100	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-12D	12/8/15	1600	G	water			X	X	X	X	X	X	X	X	X	X	X	7	
MW-12EB	12/8/15	1600	G	water			X	X	X	X	X	X	X	X	X	X	X	7	

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: K Spencer	Date/Time: 12/10/15	Company: HDR	Received by: Anna Lundin	Date/Time: 12/10/15	Company: HDR
Relinquished by: Tara Kent	Date/Time: 12/11/15	Company: HDR	Received by:	Date/Time: 12/11/15 0500	Company: TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.1, 0.8, 0.2 IR 7+0.5 12/11/15

2/26/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-333672.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-77926-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/13/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 28014379			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	SSOW#:			
Site: Xcel Energy CCR - Valmont Station				

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226_Ra228/ Ra-226/Ra-228 (3/3)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-12 (280-77926-1)	12/8/15	16:00 Mountain		Water			X	X	X	3	
MW-11 (280-77926-2)	12/9/15	09:25 Mountain		Water			X	X	X	3	
MW-10 (280-77926-3)	12/9/15	11:15 Mountain		Water			X	X	X	3	
MW-9 (280-77926-4)	12/9/15	13:00 Mountain		Water			X	X	X	3	
PLANT MW-1 (280-77926-5)	12/9/15	14:50 Mountain		Water			X	X	X	3	
MW-4 (280-77926-6)	12/9/15	17:00 Mountain		Water			X	X	X	3	
MW-3 (280-77926-7)	12/10/15	11:00 Mountain		Water			X	X	X	3	JD 12-14-15
MW-12D (280-77926-8)	12/8/15	16:00 Mountain		Water			X	X	X	3	
MW-12EB (280-77926-9)	12/8/15	16:00 Mountain		Water			X	X	X	3	

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

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

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 12-15-15 15:30	Company TA	Received by: CW McK	Date/Time: 12/16/15 9:20AM	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

3.8/C3.5

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-333671.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 280-77926-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 1/8/2016			Preservation Codes:
City: North Canton	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			Other:
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-12 (280-77926-1)	12/8/15	16:00 Mountain		Water			X		Use Collision Cell
MW-11 (280-77926-2)	12/9/15	09:25 Mountain		Water			X		Use Collision Cell
MW-10 (280-77926-3)	12/9/15	11:15 Mountain		Water			X		Use Collision Cell
MW-9 (280-77926-4)	12/9/15	13:00 Mountain		Water			X		Use Collision Cell
PLANT MW-1 (280-77926-5)	12/9/15	14:50 Mountain		Water			X		Use Collision Cell
MW-4 (280-77926-6)	12/9/15	17:00 Mountain		Water			X	1	Use Collision Cell JD 12-14-15
MW-3 (280-77926-7)	12/10/15	11:00 Mountain		Water			X		Use Collision Cell
MW-12D (280-77926-8)	12/8/15	16:00 Mountain		Water			X		Use Collision Cell
MW-12EB (280-77926-9)	12/8/15	16:00 Mountain		Water			X		Use Collision Cell

Possible Hazard Identification
Unconfirmed

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 12-15-15 1513	Company TA	Received by: Jacquelyn Jewell	Date/Time: 12/16/15 930	Company TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

2/26/2016

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # :

Client TA Denver Site Name

Cooler unpacked by: J. Genel

Cooler Received on 12/16/15 Opened on 12/16/15

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box (Client Cooler) Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# 53 (CF +0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN# 48 (CF -0.3 °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.5 °C ☐ See Multiple Cooler Form

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~

IR GUN# 8 (CF -0.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity	Yes (No)	
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes No (NA)	
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	
3. Shippers' packing slip attached to the cooler(s)?	(Yes) No	
4. Did custody papers accompany the sample(s)?	(Yes) No	
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)	
7. Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8. Could all bottle labels be reconciled with the COC?	(Yes) No	
9. Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
10. Sufficient quantity received to perform indicated analyses?	(Yes) No	
11. Were sample(s) at the correct pH upon receipt?	Yes No (NA)	pH Strip Lot# HC559158
12. Were VOAs on the COC?	Yes (No)	
13. Were air bubbles >6 mm in any VOA vials?	Yes No (NA)	
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes (No)	
15. Was a LL Hg or Me Hg trip blank present?	Yes (No)	

Contacted PM Date by via Verbal Voice Mail Other

Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container.

Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.

Time preserved: Preservative(s) added/Lot number(s):

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-77926-1

Login Number: 77926
List Number: 1
Creator: Dedio, Michael T

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	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.	N/A	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-77926-1

Login Number: 77926
List Number: 3
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 12/16/15 01:00 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1
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?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-77926-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-77926-1	MW-12	88.9
280-77926-2	MW-11	94.0
280-77926-3	MW-10	94.0
280-77926-4	MW-9	96.3
280-77926-5	PLANT MW-1	88.6
280-77926-6	MW-4	96.6
280-77926-7	MW-3	89.7
280-77926-8	MW-12D	72.6
280-77926-9	MW-12EB	84.3
LCS 160-228569/2-A	Lab Control Sample	93.0
LCS 160-232622/2-A	Lab Control Sample	95.4
LCSD 160-232622/3-A	Lab Control Sample Dup	94.3
MB 160-228569/1-A	Method Blank	96.2
MB 160-232622/1-A	Method Blank	101

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-77926-1	MW-12	88.9	84.9
280-77926-2	MW-11	82.9	95.3
280-77926-3	MW-10	94.0	90.8
280-77926-4	MW-9	96.3	89.7
280-77926-5	PLANT MW-1	88.6	84.5
280-77926-6	MW-4	96.6	90.1
280-77926-7	MW-3	89.7	90.8
280-77926-8	MW-12D	72.6	89.7
280-77926-9	MW-12EB	84.3	94.4
LCS 160-228567/2-A	Lab Control Sample	93.0	99.3
LCS 160-232627/2-A	Lab Control Sample	95.4	88.6
LCSD 160-232627/3-A	Lab Control Sample Dup	94.3	92.7
MB 160-228567/1-A	Method Blank	96.2	83.9
MB 160-232627/1-A	Method Blank	101	93.1

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-78054-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
9781 S. Meridian Blve
Suite 400
Englewood, Colorado 80112

Attn: Molly Reeves

Authorized for release by:
1/19/2016 11:13:15 AM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-78054-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-78054-1

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.

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.

RECEIPT

The samples were received on 12/15/2015 at 1:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2ºC.

The samples for method 6020 were subbed to the TestAmerica North Canton laboratory for analysis. Data will be found in this report.

The radchem samples were subbed to the TestAmerica St. Louis laboratrory for analysis. Data will be found in this report.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 12/19/2015 and analyzed on 12/21/2015 and 12/22/2015.

Beryllium, Cobalt and Selenium were detected in method blank MB 240-211598/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium failed the recovery criteria high for the MS and MSD of sample MW-6 (280-78054-1) in batch 240-212003. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Samples MW-6 (280-78054-1)[4X] and MW-8 (280-78054-2)[5X] required dilutionsprior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 12/18/2015.

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

TOTAL DISSOLVED SOLIDS

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 12/17/2015.

Job ID: 280-78054-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

The analysis volume selected for the following sample for Total Dissolved Solids batch 308170 produced a base result greater than 200mg before calculation of the final result: 280-78054-2. Reanalysis was performed and the results confirmed. The reference method specifies that no more than 200mg of weight be recovered for a chosen sample analysis volume in order to produce the best data precision. As such, these data have been qualified.

Sample MW-8 (280-78054-2) was re-analyzed outside of holding time, due to the result exceeding the calibration range. The out of hold result confirmed, so the original run is reported and flagged.

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

TOTAL SUSPENDED SOLIDS

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 12/18/2015.

The following samples were diluted due to slow filtration and high Total Suspended Solids: 280-78054-1 and 280-78054-2. The reporting limits were raised accordingly.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample 280-77928-1. Refer to the QC report for details.

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

CORROSIVITY (PH)

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 12/18/2015.

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

ANIONS (28 DAYS)

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 12/28/2015 and 12/29/2015.

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) required dilutions prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 12/21/2015 and analyzed on 01/12/2016.

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

RADIUM-228

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 12/21/2015 and analyzed on 12/24/2015.

The samples were weighed at a reduced aliquot of 500 mL due to the samples appearing cloudy.

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-6 (280-78054-1) and MW-8 (280-78054-2) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 01/14/2016.

Job ID: 280-78054-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

The samples were weighed at a reduced aliquot of 500 mL due to the samples appearing cloudy.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Client Sample ID: MW-6 — Lab Sample ID: 280-78054-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00046	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0018	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.039		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00054	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	270		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00033	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0010	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0056		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0027	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0023		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.015	B	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00017	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.45		0.080	0.044	mg/L	4		6020A	Total Recoverable
Lithium	0.054		0.032	0.0012	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.44	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	260		30	2.5	mg/L	10		9056A	Total/NA
Sulfate	640		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1600		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	150		6.7	1.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-78054-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00043	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0015	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.022		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00088	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	470		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00044	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0012	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0041		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00068	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Client Sample ID: MW-8 (Continued)

Lab Sample ID: 280-78054-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0012		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.014	B	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00018	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.63		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.10		0.040	0.0015	mg/L	5		6020A	Total Recoverable
pH adj. to 25 deg C	7.29	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.3	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	110		3.0	0.25	mg/L	1		9056A	Total/NA
Sulfate	2500		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4100	E	20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	97		6.7	1.8	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-78054-1	MW-6	Ground Water	12/14/15 11:00	12/15/15 13:20
280-78054-2	MW-8	Ground Water	12/14/15 16:00	12/15/15 13:20

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-6
Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00046	J	0.0020	0.00016	mg/L		12/19/15 13:31	12/21/15 19:03	1
Arsenic	0.0018	J	0.0050	0.00049	mg/L		12/19/15 13:31	12/21/15 19:03	1
Barium	0.039		0.0050	0.0011	mg/L		12/19/15 13:31	12/21/15 19:03	1
Beryllium	0.00054	J B	0.0010	0.000053	mg/L		12/19/15 13:31	12/21/15 19:03	1
Calcium	270		1.0	0.24	mg/L		12/19/15 13:31	12/21/15 19:03	1
Cadmium	0.00033	J	0.0010	0.000061	mg/L		12/19/15 13:31	12/21/15 19:03	1
Cobalt	0.0010	B	0.0010	0.000021	mg/L		12/19/15 13:31	12/21/15 19:03	1
Chromium	0.0056		0.0020	0.00060	mg/L		12/19/15 13:31	12/21/15 19:03	1
Molybdenum	0.0027	J	0.010	0.00023	mg/L		12/19/15 13:31	12/21/15 19:03	1
Lead	0.0023		0.0010	0.00011	mg/L		12/19/15 13:31	12/21/15 19:03	1
Selenium	0.015	B	0.0050	0.00025	mg/L		12/19/15 13:31	12/21/15 19:03	1
Thallium	0.00017	J	0.0010	0.000074	mg/L		12/19/15 13:31	12/21/15 19:03	1
Boron	0.45		0.080	0.044	mg/L		12/19/15 13:31	12/22/15 13:36	4
Lithium	0.054		0.032	0.0012	mg/L		12/19/15 13:31	12/22/15 13:36	4

Client Sample ID: MW-8
Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00043	J	0.0020	0.00016	mg/L		12/19/15 13:31	12/21/15 19:22	1
Arsenic	0.0015	J	0.0050	0.00049	mg/L		12/19/15 13:31	12/21/15 19:22	1
Barium	0.022		0.0050	0.0011	mg/L		12/19/15 13:31	12/21/15 19:22	1
Beryllium	0.00088	J B	0.0010	0.000053	mg/L		12/19/15 13:31	12/21/15 19:22	1
Calcium	470		1.0	0.24	mg/L		12/19/15 13:31	12/21/15 19:22	1
Cadmium	0.00044	J	0.0010	0.000061	mg/L		12/19/15 13:31	12/21/15 19:22	1
Cobalt	0.0012	B	0.0010	0.000021	mg/L		12/19/15 13:31	12/21/15 19:22	1
Chromium	0.0041		0.0020	0.00060	mg/L		12/19/15 13:31	12/21/15 19:22	1
Molybdenum	0.00068	J	0.010	0.00023	mg/L		12/19/15 13:31	12/21/15 19:22	1
Lead	0.0012		0.0010	0.00011	mg/L		12/19/15 13:31	12/21/15 19:22	1
Selenium	0.014	B	0.0050	0.00025	mg/L		12/19/15 13:31	12/21/15 19:22	1
Thallium	0.00018	J	0.0010	0.000074	mg/L		12/19/15 13:31	12/21/15 19:22	1
Boron	0.63		0.10	0.055	mg/L		12/19/15 13:31	12/22/15 14:00	5
Lithium	0.10		0.040	0.0015	mg/L		12/19/15 13:31	12/22/15 14:00	5

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-6
Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/18/15 09:55	12/18/15 14:29	1

Client Sample ID: MW-8
Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/18/15 09:55	12/18/15 14:31	1

General Chemistry

Client Sample ID: MW-6
Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.44	HF	0.100	0.100	SU			12/18/15 16:16	1
Temperature	23.5	HF	1.00	1.00	Degrees C			12/18/15 16:16	1
Chloride	260		30	2.5	mg/L			12/29/15 17:15	10
Fluoride	ND		0.50	0.060	mg/L			12/28/15 16:48	1
Sulfate	640		50	2.3	mg/L			12/29/15 17:15	10
Total Dissolved Solids (TDS)	1600		10	4.7	mg/L			12/17/15 17:08	1
Total Suspended Solids	150		6.7	1.8	mg/L			12/18/15 16:23	1

Client Sample ID: MW-8
Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.29	HF	0.100	0.100	SU			12/18/15 16:11	1
Temperature	23.3	HF	1.00	1.00	Degrees C			12/18/15 16:11	1
Chloride	110		3.0	0.25	mg/L			12/28/15 17:06	1
Fluoride	ND		0.50	0.060	mg/L			12/28/15 17:06	1
Sulfate	2500		100	4.6	mg/L			12/29/15 18:25	20
Total Dissolved Solids (TDS)	4100	E	20	9.4	mg/L			12/17/15 17:08	1
Total Suspended Solids	97		6.7	1.8	mg/L			12/18/15 16:23	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-6
Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.208		0.0987	0.100	1.00	0.115	pCi/L	12/21/15 15:19	01/12/16 07:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.9*		*40 - 110*	*12/21/15 15:19*	*01/12/16 07:06*	*1*

Client Sample ID: MW-8
Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.456		0.141	0.147	1.00	0.147	pCi/L	12/21/15 15:19	01/12/16 07:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*12/21/15 15:19*	*01/12/16 07:06*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-6
Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.630	U	0.530	0.533	1.00	0.846	pCi/L	12/21/15 15:19	12/24/15 18:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.9*		*40 - 110*	*12/21/15 15:19*	*12/24/15 18:30*	*1*
Y Carrier	*94.4*		*40 - 110*	*12/21/15 15:19*	*12/24/15 18:30*	*1*

Client Sample ID: MW-8
Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.11**		0.518	0.528	1.00	0.755	pCi/L	12/21/15 15:19	12/24/15 18:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*12/21/15 15:19*	*12/24/15 18:30*	*1*
Y Carrier	*96.1*		*40 - 110*	*12/21/15 15:19*	*12/24/15 18:30*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-6
Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.839	U	0.539	0.542	5.00	0.846	pCi/L		01/14/16 23:26	1

Client Sample ID: MW-8
Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.56**		0.537	0.548	5.00	0.755	pCi/L		01/14/16 23:26	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-211598/1-A
Matrix: Water
Analysis Batch: 211893

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		12/19/15 13:31	12/21/15 18:55	1
Arsenic	ND		0.0050	0.00049	mg/L		12/19/15 13:31	12/21/15 18:55	1
Barium	ND		0.0050	0.0011	mg/L		12/19/15 13:31	12/21/15 18:55	1
Beryllium	0.000103	J	0.0010	0.000053	mg/L		12/19/15 13:31	12/21/15 18:55	1
Calcium	ND		1.0	0.24	mg/L		12/19/15 13:31	12/21/15 18:55	1
Cadmium	ND		0.0010	0.000061	mg/L		12/19/15 13:31	12/21/15 18:55	1
Cobalt	0.0000330	J	0.0010	0.000021	mg/L		12/19/15 13:31	12/21/15 18:55	1
Chromium	ND		0.0020	0.00060	mg/L		12/19/15 13:31	12/21/15 18:55	1
Molybdenum	ND		0.010	0.00023	mg/L		12/19/15 13:31	12/21/15 18:55	1
Lead	ND		0.0010	0.00011	mg/L		12/19/15 13:31	12/21/15 18:55	1
Selenium	0.000350	J	0.0050	0.00025	mg/L		12/19/15 13:31	12/21/15 18:55	1
Thallium	ND		0.0010	0.000074	mg/L		12/19/15 13:31	12/21/15 18:55	1

Lab Sample ID: MB 240-211598/1-A
Matrix: Water
Analysis Batch: 212003

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020	0.011	mg/L		12/19/15 13:31	12/22/15 13:24	1
Lithium	ND		0.0080	0.00029	mg/L		12/19/15 13:31	12/22/15 13:24	1

Lab Sample ID: LCS 240-211598/2-A
Matrix: Water
Analysis Batch: 211893

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0943		mg/L		94	80 - 120
Arsenic	1.00	0.948		mg/L		95	80 - 120
Barium	1.00	0.940		mg/L		94	80 - 120
Beryllium	1.00	0.996		mg/L		100	80 - 120
Calcium	10.0	10.5		mg/L		105	80 - 120
Cadmium	1.00	0.990		mg/L		99	80 - 120
Cobalt	1.00	0.982		mg/L		98	80 - 120
Chromium	1.00	0.955		mg/L		95	80 - 120
Molybdenum	0.100	0.0905		mg/L		90	80 - 120
Lead	1.00	0.970		mg/L		97	80 - 120
Selenium	1.00	0.980		mg/L		98	80 - 120
Thallium	0.250	0.235		mg/L		94	80 - 120

Lab Sample ID: LCS 240-211598/2-A
Matrix: Water
Analysis Batch: 212003

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.0926		mg/L		93	80 - 120
Lithium	0.100	0.0952		mg/L		95	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-78054-1 MS
Matrix: Ground Water
Analysis Batch: 211893

Client Sample ID: MW-6
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00046	J	0.100	0.0953		mg/L		95	75 - 125
Arsenic	0.0018	J	1.00	0.997		mg/L		100	75 - 125
Barium	0.039		1.00	1.01		mg/L		97	75 - 125
Beryllium	0.00054	J B	1.00	0.945		mg/L		94	75 - 125
Calcium	270		10.0	296	4	mg/L		252	75 - 125
Cadmium	0.00033	J	1.00	0.954		mg/L		95	75 - 125
Cobalt	0.0010	B	1.00	0.914		mg/L		91	75 - 125
Chromium	0.0056		1.00	0.942		mg/L		94	75 - 125
Molybdenum	0.0027	J	0.100	0.0983		mg/L		96	75 - 125
Lead	0.0023		1.00	0.910		mg/L		91	75 - 125
Selenium	0.015	B	1.00	1.01		mg/L		100	75 - 125
Thallium	0.00017	J	0.250	0.223		mg/L		89	75 - 125

Lab Sample ID: 280-78054-1 MS
Matrix: Ground Water
Analysis Batch: 212003

Client Sample ID: MW-6
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.45		0.100	0.574	4	mg/L		125	75 - 125
Lithium	0.054		0.100	0.150		mg/L		96	75 - 125

Lab Sample ID: 280-78054-1 MSD
Matrix: Ground Water
Analysis Batch: 211893

Client Sample ID: MW-6
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00046	J	0.100	0.0927		mg/L		92	75 - 125	3	20
Arsenic	0.0018	J	1.00	0.959		mg/L		96	75 - 125	4	20
Barium	0.039		1.00	0.959		mg/L		92	75 - 125	5	20
Beryllium	0.00054	J B	1.00	0.911		mg/L		91	75 - 125	4	20
Calcium	270		10.0	286	4	mg/L		158	75 - 125	3	20
Cadmium	0.00033	J	1.00	0.911		mg/L		91	75 - 125	5	20
Cobalt	0.0010	B	1.00	0.884		mg/L		88	75 - 125	3	20
Chromium	0.0056		1.00	0.889		mg/L		88	75 - 125	6	20
Molybdenum	0.0027	J	0.100	0.0954		mg/L		93	75 - 125	3	20
Lead	0.0023		1.00	0.877		mg/L		87	75 - 125	4	20
Selenium	0.015	B	1.00	0.979		mg/L		96	75 - 125	3	20
Thallium	0.00017	J	0.250	0.217		mg/L		87	75 - 125	3	20

Lab Sample ID: 280-78054-1 MSD
Matrix: Ground Water
Analysis Batch: 212003

Client Sample ID: MW-6
Prep Type: Total Recoverable
Prep Batch: 211598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.45		0.100	0.556	4	mg/L		106	75 - 125	3	20
Lithium	0.054		0.100	0.146		mg/L		93	75 - 125	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-308241/1-A
Matrix: Water
Analysis Batch: 308505

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308241

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/18/15 09:55	12/18/15 14:01	1

Lab Sample ID: LCS 280-308241/2-A
Matrix: Water
Analysis Batch: 308505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308241

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.14		ug/L		103	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-308341/4
Matrix: Water
Analysis Batch: 308341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.040		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-308992/6
Matrix: Water
Analysis Batch: 308992

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			12/28/15 12:58	1
Fluoride	ND		0.50	0.060	mg/L			12/28/15 12:58	1
Sulfate	ND		5.0	0.23	mg/L			12/28/15 12:58	1

Lab Sample ID: LCS 280-308992/4
Matrix: Water
Analysis Batch: 308992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.9		mg/L		97	90 - 110
Fluoride	5.00	5.10		mg/L		102	90 - 110
Sulfate	100	97.3		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-308992/5
Matrix: Water
Analysis Batch: 308992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	97.1		mg/L		97	90 - 110	0	10
Fluoride	5.00	5.07		mg/L		101	90 - 110	1	10
Sulfate	100	97.4		mg/L		97	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-308992/3
Matrix: Water
Analysis Batch: 308992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.52	J	mg/L		101	50 - 150
Fluoride	0.200	0.133	J	mg/L		66	50 - 150
Sulfate	2.50	2.60	J	mg/L		104	50 - 150

Lab Sample ID: MB 280-309062/6
Matrix: Water
Analysis Batch: 309062

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			12/29/15 12:17	1
Sulfate	ND		5.0	0.23	mg/L			12/29/15 12:17	1

Lab Sample ID: LCS 280-309062/4
Matrix: Water
Analysis Batch: 309062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	98.7		mg/L		99	90 - 110
Sulfate	100	99.1		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-309062/5
Matrix: Water
Analysis Batch: 309062

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.7		mg/L		99	90 - 110	0	10
Sulfate	100	99.2		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-309062/3
Matrix: Water
Analysis Batch: 309062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.59	J	mg/L		104	50 - 150
Sulfate	2.50	2.71	J	mg/L		109	50 - 150

Lab Sample ID: 280-78054-1 MS
Matrix: Ground Water
Analysis Batch: 309062

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	260		250	515		mg/L		100	80 - 120
Sulfate	640		250	880		mg/L		97	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-78054-1 MSD
Matrix: Ground Water
Analysis Batch: 309062

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	260		250	512		mg/L		99	80 - 120	1	20
Sulfate	640		250	871		mg/L		94	80 - 120	1	20

Lab Sample ID: 280-78054-1 DU
Matrix: Ground Water
Analysis Batch: 309062

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	260		257		mg/L		3	15
Sulfate	640		621		mg/L		3	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-308170/1
Matrix: Water
Analysis Batch: 308170

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/17/15 17:08	1

Lab Sample ID: LCS 280-308170/2
Matrix: Water
Analysis Batch: 308170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	484		mg/L		97	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-308317/2
Matrix: Water
Analysis Batch: 308317

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/18/15 16:23	1

Lab Sample ID: LCS 280-308317/1
Matrix: Water
Analysis Batch: 308317

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	92.0		mg/L		92	86 - 114

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-228569/1-A
Matrix: Water
Analysis Batch: 231800

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 228569

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03573	U	0.0337	0.0339	1.00	0.0520	pCi/L	12/21/15 15:19	01/12/16 07:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*12/21/15 15:19*	*01/12/16 07:04*	*1*

Lab Sample ID: LCS 160-228569/2-A
Matrix: Water
Analysis Batch: 231800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 228569

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	10.40		1.01	1.00	0.0648	pCi/L	93	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.0*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-228567/1-A
Matrix: Water
Analysis Batch: 229532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 228567

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09709	U	0.218	0.218	1.00	0.373	pCi/L	12/21/15 15:19	12/24/15 18:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*12/21/15 15:19*	*12/24/15 18:29*	*1*
Y Carrier	*83.9*		*40 - 110*	*12/21/15 15:19*	*12/24/15 18:29*	*1*

Lab Sample ID: LCS 160-228567/2-A
Matrix: Water
Analysis Batch: 229532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 228567

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			3.18	1.833		0.365	1.00	0.348	pCi/L	58	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.0*		*40 - 110*
Y Carrier	*99.3*		*40 - 110*

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Metals

Prep Batch: 211598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total Recoverable	Ground Water	3005A	
280-78054-1 MS	MW-6	Total Recoverable	Ground Water	3005A	
280-78054-1 MSD	MW-6	Total Recoverable	Ground Water	3005A	
280-78054-2	MW-8	Total Recoverable	Ground Water	3005A	
LCS 240-211598/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-211598/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 211893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total Recoverable	Ground Water	6020A	211598
280-78054-1 MS	MW-6	Total Recoverable	Ground Water	6020A	211598
280-78054-1 MSD	MW-6	Total Recoverable	Ground Water	6020A	211598
280-78054-2	MW-8	Total Recoverable	Ground Water	6020A	211598
LCS 240-211598/2-A	Lab Control Sample	Total Recoverable	Water	6020A	211598
MB 240-211598/1-A	Method Blank	Total Recoverable	Water	6020A	211598

Analysis Batch: 212003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total Recoverable	Ground Water	6020A	211598
280-78054-1 MS	MW-6	Total Recoverable	Ground Water	6020A	211598
280-78054-1 MSD	MW-6	Total Recoverable	Ground Water	6020A	211598
280-78054-2	MW-8	Total Recoverable	Ground Water	6020A	211598
LCS 240-211598/2-A	Lab Control Sample	Total Recoverable	Water	6020A	211598
MB 240-211598/1-A	Method Blank	Total Recoverable	Water	6020A	211598

Prep Batch: 308241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	7470A	
280-78054-2	MW-8	Total/NA	Ground Water	7470A	
LCS 280-308241/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-308241/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 308505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	7470A	308241
280-78054-2	MW-8	Total/NA	Ground Water	7470A	308241
LCS 280-308241/2-A	Lab Control Sample	Total/NA	Water	7470A	308241
MB 280-308241/1-A	Method Blank	Total/NA	Water	7470A	308241

General Chemistry

Analysis Batch: 308170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	SM 2540C	
280-78054-2	MW-8	Total/NA	Ground Water	SM 2540C	
LCS 280-308170/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-308170/1	Method Blank	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 308317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	SM 2540D	
280-78054-2	MW-8	Total/NA	Ground Water	SM 2540D	
LCS 280-308317/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-308317/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 308341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	9040B	
280-78054-2	MW-8	Total/NA	Ground Water	9040B	
LCS 280-308341/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 308992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	9056A	
280-78054-2	MW-8	Total/NA	Ground Water	9056A	
LCS 280-308992/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-308992/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-308992/6	Method Blank	Total/NA	Water	9056A	
MRL 280-308992/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 309062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	9056A	
280-78054-1 DU	MW-6	Total/NA	Ground Water	9056A	
280-78054-1 MS	MW-6	Total/NA	Ground Water	9056A	
280-78054-1 MSD	MW-6	Total/NA	Ground Water	9056A	
280-78054-2	MW-8	Total/NA	Ground Water	9056A	
LCS 280-309062/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-309062/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-309062/6	Method Blank	Total/NA	Water	9056A	
MRL 280-309062/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 228567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	PrecSep_0	
280-78054-2	MW-8	Total/NA	Ground Water	PrecSep_0	
LCS 160-228567/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-228567/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 228569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78054-1	MW-6	Total/NA	Ground Water	PrecSep-21	
280-78054-2	MW-8	Total/NA	Ground Water	PrecSep-21	
LCS 160-228569/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-228569/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Client Sample ID: MW-6

Date Collected: 12/14/15 11:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211598	12/19/15 13:31	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211893	12/21/15 19:03	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211598	12/19/15 13:31	WKD	TAL CAN
Total Recoverable	Analysis	6020A		4	50 mL	50 mL	212003	12/22/15 13:36	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	308241	12/18/15 09:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308505	12/18/15 14:29	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308341	12/18/15 16:16	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308992	12/28/15 16:48	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	309062	12/29/15 17:15	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	308170	12/17/15 17:08	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	150 mL	250 mL	308317	12/18/15 16:23	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			503.29 mL	1.0 g	228569	12/21/15 15:19	SCB	TAL SL
Total/NA	Analysis	9315		1	503.29 mL		231800	01/12/16 07:06	ALS	TAL SL
Total/NA	Prep	PrecSep_0			503.29 mL	1.0 g	228567	12/21/15 15:19	SCB	TAL SL
Total/NA	Analysis	9320		1	503.29 mL		229532	12/24/15 18:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			232569	01/14/16 23:26	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 12/14/15 16:00
Date Received: 12/15/15 13:20

Lab Sample ID: 280-78054-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	211598	12/19/15 13:31	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	211893	12/21/15 19:22	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	211598	12/19/15 13:31	WKD	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	212003	12/22/15 14:00	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	308241	12/18/15 09:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308505	12/18/15 14:31	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308341	12/18/15 16:11	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	308992	12/28/15 17:06	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	309062	12/29/15 18:25	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	308170	12/17/15 17:08	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	150 mL	250 mL	308317	12/18/15 16:23	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			499.49 mL	1.0 g	228569	12/21/15 15:19	SCB	TAL SL
Total/NA	Analysis	9315		1	499.49 mL		231800	01/12/16 07:06	ALS	TAL SL
Total/NA	Prep	PrecSep_0			499.49 mL	1.0 g	228567	12/21/15 15:19	SCB	TAL SL
Total/NA	Analysis	9320		1	499.49 mL		229532	12/24/15 18:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			232569	01/14/16 23:26	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Ground Water	Mercury
9040B		Ground Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Illinois	NELAP	5	200004	07-31-16
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-26-16 *
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16
New Jersey	NELAP	2	OH001	06-30-16
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-16 *
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-16 *
West Virginia DEP	State Program	3	210	12-31-15 *
Wisconsin	State Program	5	999518190	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	01-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-15 *
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-16 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-78054 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: GREG Kelly	Lab PM: Kupper, Stephanie	COC No:
Client Contact: Lynn Lutz	Phone: 720 893 7275	E-Mail: stephanie.kupper@testamericainc.com	Page: Page 1 of 1
Company: HDR Inc			Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:		
City: Englewood	TAT Requested (days): Standard		
State, Zip: CO, 80112			
Phone: 720-633-2380(Tel)	PO #: Purchase Order Requested		
Email: Lynn.Lutz@hdrinc.com	WO #:		
Project Name: Valmont	Project #: 28014230		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals (12) - 6020A, Mercury - 7470A - TA Canton	pH - 9040B, Anions - 9056A	2540D - Total Suspended Solids	Radium - 9315_Ra226, 9320_Ra228 - TA St. Louis	Metals - (Boron and Calcium) - TA Canton	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D	D		
MW-6	12/14/15	1100	G	Water	N	N	✓	✓	✓	✓	✓	✓		Refer to Project Setup
MW-8	12/14/15	1600	G	W	N	N	✓	✓	✓	✓	✓	✓		

CK 12/14/15

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

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

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

Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by: Greg Kelly	12/14/15 1640	HDR	Tara Kart	12.14.15 1840	HDR
Relinquished by: Tara Kart	14 Dec 2015 1320	HDR		12/15/15 1320	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.2+0.0 IR#7 DW 12/15/15

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-334097.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-78054-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/14/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226_Ra228/ Ra-226/Ra-228 (3/3)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
				Preservation Code:							
MW-6 (280-78054-1)	12/14/15	11:00 Mountain		Water			X	X	X	2	1-L bottles
MW-8 (280-78054-2)	12/14/15	16:00 Mountain		Water			X	X	X	2	1-L bottles

Possible Hazard Identification
Unconfirmed

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 12/17/15 @1500	Company: TAD	Received by: C McKy	Date/Time: 121815 0930	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

2.8/C2,5

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-334098.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 280-78054-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 1/12/2016			Preservation Codes:
City: North Canton	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: OH, 44720	PO #:			
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	WO #:			Other:
Email:				
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			S70

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-6 (280-78054-1)	12/14/15	11:00 Mountain		Water			X	1	Use Collision Cell / 500-mL bottle
MW-8 (280-78054-2)	12/14/15	16:00 Mountain		Water			X	1	Use Collision Cell / 500-mL bottle

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/17/15 @ 1500	TAL		12.18.15 1000	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

1/19/2016

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : _____

Client Denver Site Name _____

Cooler unpacked by: [signature]

Cooler Received on 12.18.15 Opened on 12.18.15

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box (Client Cooler) Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# 53 (CF +0.1 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

IR GUN# 48 (CF -0.3 °C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 2.5 °C ☐ See Multiple Cooler Form

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C~~

IR GUN# 8 (CF -0.5 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were custody seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
3. Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	(No)
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels be reconciled with the COC?	(Yes)	No
9. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
10. Sufficient quantity received to perform indicated analyses?	(Yes)	No
11. Were sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# HC559158
12. Were VOAs on the COC?	Yes	(No)
13. Were air bubbles >6 mm in any VOA vials?	Yes	No (NA)
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	(No)
15. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-78054-1

Login Number: 78054
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-78054-1

Login Number: 78054
List Number: 2
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 12/18/15 02:17 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8°C
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?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78054-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)								
280-78054-1	MW-6	80.9								
280-78054-2	MW-8	86.7								

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)								
LCS 160-228569/2-A	Lab Control Sample	93.0								
MB 160-228569/1-A	Method Blank	96.2								

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)							
280-78054-1	MW-6	80.9	94.4							
280-78054-2	MW-8	86.7	96.1							

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)							
LCS 160-228567/2-A	Lab Control Sample	93.0	99.3							
MB 160-228567/1-A	Method Blank	96.2	83.9							

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-78168-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
9781 S. Meridian Blve
Suite 400
Englewood, Colorado 80112

Attn: Molly Reeves

Authorized for release by:
1/21/2016 12:23:16 PM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-78168-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-78168-1

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.

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.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

RECEIPT

The samples were received on 12/18/2015 at 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6º C.

As discussed on December 18, 2015, limited volume was submitted for sample 280-78168-1. Sufficient but limited volume remains to perform all initial analyses. If reanalysis is needed, insufficient volume may remain. Please note that some unpreserved volume will be preserved for the requested metals analyses.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 12/23/2015 and 12/31/2015 and analyzed on 01/04/2016, 12/24/2015, 12/29/2015 and 12/30/2015.

Chromium was detected in method blank MB 240-212075/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Barium, Beryllium and Calcium were detected in method blank MB 240-212075/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Chromium was detected in method blank MB 240-212721/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium failed the recovery criteria low for the MS of sample 240-59361-3 in batch 280-212435. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Samples MW-7 (280-78168-1)[20X] and MW-1 (280-78168-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Job ID: 280-78168-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

TOTAL MERCURY
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 12/22/2015.

Mercury failed the recovery criteria low for the MSD of sample 280-77830-1 in batch 280-308804. Refer to the QC report for details.

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

TOTAL DISSOLVED SOLIDS
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 12/22/2015.

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

TOTAL SUSPENDED SOLIDS
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 12/23/2015.

The following samples was diluted due to slow filtration and high Total Suspended Solids: MW-7 (280-78168-1) , MW-7 (280-78168-1)DU. Elevated reporting limits (RLs) are provided.

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

CORROSIVITY (PH)
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 12/22/2015.

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

ANIONS (28 DAYS)
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 12/30/2015.

Sample MW-7 (280-78168-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 12/24/2015 and analyzed on 01/19/2016.

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (280-78168-1), MW-1 (280-78168-2). A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were prepared instead.

The following samples were prepared at a reduced aliquot due to sediment, discoloration, and sulfur smell: MW-7 (280-78168-1).

The following sample was prepared at a reduced aliquot because the sample bottles were not completely full: MW-1 (280-78168-2).

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

RADIUM-228
Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 12/24/2015 and analyzed on 01/15/2016.

Job ID: 280-78168-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (280-78168-1), MW-1 (280-78168-2). A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were prepared instead.

The following samples were prepared at a reduced aliquot due to sediment, discoloration, and sulfur smell: MW-7 (280-78168-1).

The following sample was prepared at a reduced aliquot because the sample bottles were not completely full: MW-1 (280-78168-2).

The radium-228 detection goal was not met for the following samples due to the reduced sample volume attributed to the presence of matrix interferences: MW-7 (280-78168-1). 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.

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-7 (280-78168-1) and MW-1 (280-78168-2) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 01/20/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Client Sample ID: MW-7 — Lab Sample ID: 280-78168-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0093		0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0070		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.11	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00061	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	84	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00051	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0047		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.048	B	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.028		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.012		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0070		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00022	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	1.4		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	0.083		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.040	J	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.82	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	24.3	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	51		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.20	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	720		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1600		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	170		10	2.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-78168-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00020	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Barium	0.071	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00016	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	76	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00028	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00018	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.00099	J B	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.013		0.010	0.00023	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Client Sample ID: MW-1 (Continued)

Lab Sample ID: 280-78168-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.00031	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00027	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.77		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.036		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.72	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	24.1	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	68		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.42	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	170		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	1000		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	10		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-78168-1	MW-7	Ground Water	12/17/15 11:30	12/18/15 12:20
280-78168-2	MW-1	Ground Water	12/17/15 13:30	12/18/15 12:20

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-7
Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0093		0.0020	0.00016	mg/L		12/23/15 08:08	12/24/15 10:36	1
Arsenic	0.0070		0.0050	0.00049	mg/L		12/23/15 08:08	12/24/15 10:36	1
Barium	0.11	B	0.0050	0.0011	mg/L		12/23/15 08:08	12/24/15 10:36	1
Beryllium	0.00061	J B	0.0010	0.000053	mg/L		12/23/15 08:08	12/24/15 10:36	1
Calcium	84	B	1.0	0.24	mg/L		12/23/15 08:08	12/24/15 10:36	1
Cadmium	0.00051	J	0.0010	0.000061	mg/L		12/23/15 08:08	12/24/15 10:36	1
Cobalt	0.0047		0.0010	0.000021	mg/L		12/23/15 08:08	12/24/15 10:36	1
Chromium	0.048	B	0.0020	0.00060	mg/L		12/31/15 10:23	01/04/16 12:25	1
Molybdenum	0.028		0.010	0.00023	mg/L		12/23/15 08:08	12/24/15 10:36	1
Lead	0.012		0.0010	0.00011	mg/L		12/23/15 08:08	12/24/15 10:36	1
Selenium	0.0070		0.0050	0.00025	mg/L		12/23/15 08:08	12/24/15 10:36	1
Thallium	0.00022	J	0.0010	0.000074	mg/L		12/23/15 08:08	12/24/15 10:36	1
Boron	1.4		0.40	0.22	mg/L		12/23/15 08:08	12/30/15 10:49	20
Lithium	0.083		0.0080	0.00029	mg/L		12/23/15 08:08	12/29/15 11:33	1

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00020	J	0.0020	0.00016	mg/L		12/23/15 08:08	12/24/15 10:40	1
Arsenic	ND		0.0050	0.00049	mg/L		12/23/15 08:08	12/24/15 10:40	1
Barium	0.071	B	0.0050	0.0011	mg/L		12/23/15 08:08	12/24/15 10:40	1
Beryllium	0.00016	J B	0.0010	0.000053	mg/L		12/23/15 08:08	12/24/15 10:40	1
Calcium	76	B	1.0	0.24	mg/L		12/23/15 08:08	12/24/15 10:40	1
Cadmium	0.00028	J	0.0010	0.000061	mg/L		12/23/15 08:08	12/24/15 10:40	1
Cobalt	0.00018	J	0.0010	0.000021	mg/L		12/23/15 08:08	12/24/15 10:40	1
Chromium	0.00099	J B	0.0020	0.00060	mg/L		12/23/15 08:08	12/24/15 10:40	1
Molybdenum	0.013		0.010	0.00023	mg/L		12/23/15 08:08	12/24/15 10:40	1
Lead	0.00031	J	0.0010	0.00011	mg/L		12/23/15 08:08	12/24/15 10:40	1
Selenium	0.00027	J	0.0050	0.00025	mg/L		12/23/15 08:08	12/24/15 10:40	1
Thallium	ND		0.0010	0.000074	mg/L		12/23/15 08:08	12/24/15 10:40	1
Boron	0.77		0.20	0.11	mg/L		12/23/15 08:08	12/30/15 10:53	10
Lithium	0.036		0.0080	0.00029	mg/L		12/23/15 08:08	12/29/15 11:37	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-7
Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	J	0.20	0.027	ug/L		12/22/15 10:30	12/22/15 17:31	1

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/22/15 10:30	12/22/15 17:34	1

General Chemistry

Client Sample ID: MW-7
Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.82	HF	0.100	0.100	SU			12/22/15 22:37	1
Temperature	24.3	HF	1.00	1.00	Degrees C			12/22/15 22:37	1
Chloride	51		3.0	0.25	mg/L			12/30/15 21:06	1
Fluoride	0.20	J	0.50	0.060	mg/L			12/30/15 21:06	1
Sulfate	720		25	1.2	mg/L			12/30/15 21:24	5
Total Dissolved Solids (TDS)	1600		10	4.7	mg/L			12/22/15 07:31	1
Total Suspended Solids	170		10	2.8	mg/L			12/23/15 15:28	1

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.72	HF	0.100	0.100	SU			12/22/15 22:32	1
Temperature	24.1	HF	1.00	1.00	Degrees C			12/22/15 22:32	1
Chloride	68		3.0	0.25	mg/L			12/30/15 21:41	1
Fluoride	0.42	J	0.50	0.060	mg/L			12/30/15 21:41	1
Sulfate	170		5.0	0.23	mg/L			12/30/15 21:41	1
Total Dissolved Solids (TDS)	1000		10	4.7	mg/L			12/22/15 07:31	1
Total Suspended Solids	10		4.0	1.1	mg/L			12/23/15 15:28	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-7
Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.08		0.449	0.460	1.00	0.482	pCi/L	12/24/15 11:02	01/19/16 06:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*66.3*		*40 - 110*	*12/24/15 11:02*	*01/19/16 06:32*	*1*

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.234		0.111	0.113	1.00	0.133	pCi/L	12/24/15 11:02	01/19/16 06:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*60.5*		*40 - 110*	*12/24/15 11:02*	*01/19/16 06:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.23	U G	1.11	1.11	1.00	1.78	pCi/L	12/24/15 14:33	01/15/16 12:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*66.3*		*40 - 110*	*12/24/15 14:33*	*01/15/16 12:10*	*1*
Y Carrier	*107*		*40 - 110*	*12/24/15 14:33*	*01/15/16 12:10*	*1*

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.434	U	0.332	0.334	1.00	0.524	pCi/L	12/24/15 14:33	01/15/16 12:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*60.5*		*40 - 110*	*12/24/15 14:33*	*01/15/16 12:10*	*1*
Y Carrier	*103*		*40 - 110*	*12/24/15 14:33*	*01/15/16 12:10*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-7
Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.31**		1.19	1.20	5.00	1.78	pCi/L		01/20/16 17:17	1

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.668**		0.350	0.353	5.00	0.524	pCi/L		01/20/16 17:17	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-212075/1-A
Matrix: Water
Analysis Batch: 212435

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 212075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		12/23/15 08:08	12/24/15 10:16	1
Arsenic	ND		0.0050	0.00049	mg/L		12/23/15 08:08	12/24/15 10:16	1
Barium	0.00203	J	0.0050	0.0011	mg/L		12/23/15 08:08	12/24/15 10:16	1
Beryllium	0.0000560	J	0.0010	0.000053	mg/L		12/23/15 08:08	12/24/15 10:16	1
Calcium	0.334	J	1.0	0.24	mg/L		12/23/15 08:08	12/24/15 10:16	1
Cadmium	ND		0.0010	0.000061	mg/L		12/23/15 08:08	12/24/15 10:16	1
Cobalt	ND		0.0010	0.000021	mg/L		12/23/15 08:08	12/24/15 10:16	1
Chromium	0.00779		0.0020	0.00060	mg/L		12/23/15 08:08	12/24/15 10:16	1
Molybdenum	ND		0.010	0.00023	mg/L		12/23/15 08:08	12/24/15 10:16	1
Lead	ND		0.0010	0.00011	mg/L		12/23/15 08:08	12/24/15 10:16	1
Selenium	ND		0.0050	0.00025	mg/L		12/23/15 08:08	12/24/15 10:16	1
Thallium	ND		0.0010	0.000074	mg/L		12/23/15 08:08	12/24/15 10:16	1

Lab Sample ID: MB 240-212075/1-A
Matrix: Water
Analysis Batch: 212572

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 212075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0080	0.00029	mg/L		12/23/15 08:08	12/29/15 10:42	1

Lab Sample ID: MB 240-212075/1-A
Matrix: Water
Analysis Batch: 212618

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 212075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020	0.011	mg/L		12/23/15 08:08	12/30/15 10:37	1

Lab Sample ID: LCS 240-212075/2-A
Matrix: Water
Analysis Batch: 212435

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 212075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0921		mg/L		92	80 - 120
Arsenic	1.00	0.914		mg/L		91	80 - 120
Barium	1.00	0.923		mg/L		92	80 - 120
Beryllium	1.00	0.950		mg/L		95	80 - 120
Calcium	10.0	9.45		mg/L		95	80 - 120
Cadmium	1.00	0.944		mg/L		94	80 - 120
Cobalt	1.00	0.963		mg/L		96	80 - 120
Chromium	1.00	0.944		mg/L		94	80 - 120
Molybdenum	0.100	0.0893		mg/L		89	80 - 120
Lead	1.00	0.935		mg/L		93	80 - 120
Selenium	1.00	0.931		mg/L		93	80 - 120
Thallium	0.250	0.231		mg/L		92	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 240-212075/2-A
Matrix: Water
Analysis Batch: 212572

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 212075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.100	0.0901		mg/L		90	80 - 120

Lab Sample ID: LCS 240-212075/2-A
Matrix: Water
Analysis Batch: 212618

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 212075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.0901		mg/L		90	80 - 120

Lab Sample ID: MB 240-212721/1-A
Matrix: Water
Analysis Batch: 212926

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 212721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.00229		0.0020	0.00060	mg/L		12/31/15 08:59	01/04/16 11:49	1

Lab Sample ID: LCS 240-212721/23-A
Matrix: Water
Analysis Batch: 212926

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 212721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	1.00	0.959		mg/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-308509/1-A
Matrix: Water
Analysis Batch: 308804

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308509

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		12/22/15 10:30	12/22/15 16:50	1

Lab Sample ID: LCS 280-308509/2-A
Matrix: Water
Analysis Batch: 308804

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308509

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.92		ug/L		98	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-308726/4
Matrix: Water
Analysis Batch: 308726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.060		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-309223/6
Matrix: Water
Analysis Batch: 309223

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			12/30/15 11:05	1
Fluoride	ND		0.50	0.060	mg/L			12/30/15 11:05	1
Sulfate	ND		5.0	0.23	mg/L			12/30/15 11:05	1

Lab Sample ID: LCS 280-309223/4
Matrix: Water
Analysis Batch: 309223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.0		mg/L		99	90 - 110
Fluoride	5.00	5.18		mg/L		104	90 - 110
Sulfate	100	99.7		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-309223/5
Matrix: Water
Analysis Batch: 309223

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.2		mg/L		99	90 - 110	0	10
Fluoride	5.00	5.17		mg/L		103	90 - 110	0	10
Sulfate	100	99.6		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-309223/3
Matrix: Water
Analysis Batch: 309223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.55	J	mg/L		102	50 - 150
Fluoride	0.200	0.117	J	mg/L		58	50 - 150
Sulfate	2.50	2.68	J	mg/L		107	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-308578/1
Matrix: Water
Analysis Batch: 308578

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/22/15 07:31	1

Lab Sample ID: LCS 280-308578/2
Matrix: Water
Analysis Batch: 308578

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	499		mg/L		100	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-308845/2
Matrix: Water
Analysis Batch: 308845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/15 15:28	1

Lab Sample ID: LCS 280-308845/1
Matrix: Water
Analysis Batch: 308845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	92.0		mg/L		92	86 - 114

Lab Sample ID: 280-78168-1 DU
Matrix: Ground Water
Analysis Batch: 308845

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	170		157		mg/L		6	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-229500/1-A
Matrix: Water
Analysis Batch: 233143

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229500

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.001013	U	0.0484	0.0484	1.00	0.0952	pCi/L	12/24/15 11:02	01/19/16 06:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*109*		*40 - 110*	*12/24/15 11:02*	*01/19/16 06:29*	*1*

Lab Sample ID: LCS 160-229500/2-A
Matrix: Water
Analysis Batch: 233143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 229500

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	10.59		1.06	1.00	0.0986	pCi/L	95	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*106*		*40 - 110*

Lab Sample ID: LCSD 160-229500/3-A
Matrix: Water
Analysis Batch: 233143

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 229500

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.2	10.94		1.12	1.00	0.104	pCi/L	98	68 - 137	0.16	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-229500/3-A
Matrix: Water
Analysis Batch: 233143

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 229500

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	80.4		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-229522/1-A
Matrix: Water
Analysis Batch: 232602

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229522

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1170	U	0.143	0.144	1.00	0.237	pCi/L	12/24/15 14:33	01/15/16 12:02	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110	12/24/15 14:33	01/15/16 12:02	1
Y Carrier	104		40 - 110	12/24/15 14:33	01/15/16 12:02	1

Lab Sample ID: LCS 160-229522/2-A
Matrix: Water
Analysis Batch: 232602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 229522

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			3.16	2.445		0.372	1.00	0.241	pCi/L	77	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	106		40 - 110
Y Carrier	106		40 - 110

Lab Sample ID: LCSD 160-229522/3-A
Matrix: Water
Analysis Batch: 232602

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 229522

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			3.16	1.995		0.375	1.00	0.318	pCi/L	63	56 - 140	0.60	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	80.4		40 - 110
Y Carrier	104		40 - 110

Metals

Prep Batch: 212075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total Recoverable	Ground Water	3005A	
280-78168-2	MW-1	Total Recoverable	Ground Water	3005A	
LCS 240-212075/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-212075/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 212435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total Recoverable	Ground Water	6020A	212075
280-78168-2	MW-1	Total Recoverable	Ground Water	6020A	212075
LCS 240-212075/2-A	Lab Control Sample	Total Recoverable	Water	6020A	212075
MB 240-212075/1-A	Method Blank	Total Recoverable	Water	6020A	212075

Analysis Batch: 212572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total Recoverable	Ground Water	6020A	212075
280-78168-2	MW-1	Total Recoverable	Ground Water	6020A	212075
LCS 240-212075/2-A	Lab Control Sample	Total Recoverable	Water	6020A	212075
MB 240-212075/1-A	Method Blank	Total Recoverable	Water	6020A	212075

Analysis Batch: 212618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total Recoverable	Ground Water	6020A	212075
280-78168-2	MW-1	Total Recoverable	Ground Water	6020A	212075
LCS 240-212075/2-A	Lab Control Sample	Total Recoverable	Water	6020A	212075
MB 240-212075/1-A	Method Blank	Total Recoverable	Water	6020A	212075

Prep Batch: 212721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total Recoverable	Ground Water	3005A	
LCS 240-212721/23-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-212721/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 212926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total Recoverable	Ground Water	6020A	212721
LCS 240-212721/23-A	Lab Control Sample	Total Recoverable	Water	6020A	212721
MB 240-212721/1-A	Method Blank	Total Recoverable	Water	6020A	212721

Prep Batch: 308509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	7470A	
280-78168-2	MW-1	Total/NA	Ground Water	7470A	
LCS 280-308509/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-308509/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 308804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	7470A	308509
280-78168-2	MW-1	Total/NA	Ground Water	7470A	308509
LCS 280-308509/2-A	Lab Control Sample	Total/NA	Water	7470A	308509
MB 280-308509/1-A	Method Blank	Total/NA	Water	7470A	308509

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

General Chemistry

Analysis Batch: 308578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	SM 2540C	
280-78168-2	MW-1	Total/NA	Ground Water	SM 2540C	
LCS 280-308578/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-308578/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 308726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	9040B	
280-78168-2	MW-1	Total/NA	Ground Water	9040B	
LCS 280-308726/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 308845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	SM 2540D	
280-78168-1 DU	MW-7	Total/NA	Ground Water	SM 2540D	
280-78168-2	MW-1	Total/NA	Ground Water	SM 2540D	
LCS 280-308845/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-308845/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 309223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	9056A	
280-78168-1	MW-7	Total/NA	Ground Water	9056A	
280-78168-2	MW-1	Total/NA	Ground Water	9056A	
LCS 280-309223/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-309223/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-309223/6	Method Blank	Total/NA	Water	9056A	
MRL 280-309223/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 229500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	PrecSep-21	
280-78168-2	MW-1	Total/NA	Ground Water	PrecSep-21	
LCS 160-229500/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-229500/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-229500/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 229522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-78168-1	MW-7	Total/NA	Ground Water	PrecSep_0	
280-78168-2	MW-1	Total/NA	Ground Water	PrecSep_0	
LCS 160-229522/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-229522/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-229522/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Client Sample ID: MW-7

Date Collected: 12/17/15 11:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	212721	12/31/15 10:23	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212926	01/04/16 12:25	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	212075	12/23/15 08:08	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212435	12/24/15 10:36	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	212075	12/23/15 08:08	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 11:33	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	212075	12/23/15 08:08	WKD	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	212618	12/30/15 10:49	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	308509	12/22/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308804	12/22/15 17:31	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308726	12/22/15 22:37	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	309223	12/30/15 21:06	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	309223	12/30/15 21:24	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	308578	12/22/15 07:31	WTW	TAL DEN
Total/NA	Analysis	SM 2540D		1	100 mL	250 mL	308845	12/23/15 15:28	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			249.47 mL	1.0 g	229500	12/24/15 11:02	CMT	TAL SL
Total/NA	Analysis	9315		1	249.47 mL		233143	01/19/16 06:32	MFM	TAL SL
Total/NA	Prep	PrecSep_0			249.47 mL	1.0 g	229522	12/24/15 14:33	CMT	TAL SL
Total/NA	Analysis	9320		1	249.47 mL		232603	01/15/16 12:10	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			233466	01/20/16 17:17	RTM	TAL SL

Client Sample ID: MW-1

Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	212075	12/23/15 08:08	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212435	12/24/15 10:40	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	212075	12/23/15 08:08	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	212572	12/29/15 11:37	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	212075	12/23/15 08:08	WKD	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	212618	12/30/15 10:53	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	308509	12/22/15 10:30	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	308804	12/22/15 17:34	CDH	TAL DEN
Total/NA	Analysis	9040B		1			308726	12/22/15 22:32	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	309223	12/30/15 21:41	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	308578	12/22/15 07:31	WTW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	308845	12/23/15 15:28	MW1	TAL DEN
Total/NA	Prep	PrecSep-21			942.97 mL	1.0 g	229500	12/24/15 11:02	CMT	TAL SL
Total/NA	Analysis	9315		1	942.97 mL		233143	01/19/16 06:32	MFM	TAL SL
Total/NA	Prep	PrecSep_0			942.97 mL	1.0 g	229522	12/24/15 14:33	CMT	TAL SL
Total/NA	Analysis	9320		1	942.97 mL		232603	01/15/16 12:10	ALS	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Client Sample ID: MW-1
Date Collected: 12/17/15 13:30
Date Received: 12/18/15 12:20

Lab Sample ID: 280-78168-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			233466	01/20/16 17:17	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Ground Water	Mercury
9040B		Ground Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Illinois	NELAP	5	200004	07-31-16
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-26-16 *
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16
New Jersey	NELAP	2	OH001	06-30-16
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-16 *
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-16 *
West Virginia DEP	State Program	3	210	12-31-15 *
Wisconsin	State Program	5	999518190	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	01-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-15 *
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-16 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

Chain of Custody Record

Sampler ID _____

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmeric

THE LEADER IN ENVIRONMENTAL TE

280-78168 Chain of Custody

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
ANNA LUNDIN, HDR INC	ANNA LUNDIN	12/18/15	187661

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
9781 S. Meridian Blvd, Ste 400	303 323 9805		

City	State	Zip Code	Site Contact	Lab Contact
ENGLEWOOD	CO	80112		S. Kupper

Project Name and Location (State): Xcel Energy GW CCR Monitoring-Valmont

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.: Proj# 28014371 Den-001

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	2540c TDS	Metals 6020a 7470a	pH 9040B, Anions 9056a ...28D	2540D-TSS	9315, 9320 Ra 226 Ra 228	Special Instructions/ Conditions of Receipt
MW-7	12/17/15	1130		X			2		1				✓	✓	✓	✓	✓	Refer to Proj Setup
MW-1	12/17/15	1330		X			3		4				✓	✓	✓	✓	✓	Limited Volume (as discussed with ~~Jennifer~~ Jessica DeHerrera

GK 12/17/15

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

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

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other STANDARD

QC Requirements (Specify): Refer to Project Setup

	Date	Time		Date	Time
1. Relinquished By: Greg Kelly	12/18/15	1220	1. Received By: [signature]	12/18/15	1220
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: 3.6+0.0 IR#7 DW 12/18/15

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-334464.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-78168-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/21/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226_Ra228/ Ra-226/Ra-228 (3/3)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-7 (280-78168-1)	12/17/15	11:30 Mountain		Water			X	X	X	1	1-L Nitric Acid preserved poly
MW-1 (280-78168-2)	12/17/15	13:30 Mountain		Water			X	X	X	2	1-L Nitric Acid preserved poly

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 12/21/15 @1430	Company TAD	Received by:	Date/Time: 12 22 15 0950	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

3.8/c3-5

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-334466.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 280-78168-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 1/18/2016			Preservation Codes:
City: North Canton	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						567
MW-7 (280-78168-1)	12/17/15	11:30 Mountain		Water			X	1	Use Collision Cell 250-mL UP poly - PLEASE PRESERVE
MW-1 (280-78168-2)	12/17/15	13:30 Mountain		Water			X	1	Use Collision Cell 500-mL Nitric Acid preserved poly

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/21/15 @1430	TAD		12-22-15 1100	TA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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1/21/2016

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : _____

Client Denver Site Name _____

Cooler unpacked by:

Cooler Received on 12-22-15 Opened on 12-23-15

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# 53 (CF +0.1 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

IR GUN# 48 (CF -0.3 °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.5 °C ☐ See Multiple Cooler Form

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C~~

IR GUN# 8 (CF -0.5 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Were sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC559158
12. Were VOAs on the COC?	Yes	No
13. Were air bubbles >6 mm in any VOA vials?	Yes	No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	No
15. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) MW7 (78168-1) 14250 were further preserved in the laboratory.

Time preserved: 12:05 Preservative(s) added/Lot number(s): 119634

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-78168-1

Login Number: 78168
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	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	Limited volume for sample MW-7
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.	False	Sample splitting required for subcontract purposes.
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-78168-1

Login Number: 78168
List Number: 3
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 12/22/15 01:31 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
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?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-78168-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-78168-1	MW-7	66.3
280-78168-2	MW-1	60.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
LCS 160-229500/2-A	Lab Control Sample	106
LCSD 160-229500/3-A	Lab Control Sample Dup	80.4
MB 160-229500/1-A	Method Blank	109

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-78168-1	MW-7	66.3	107
280-78168-2	MW-1	60.5	103

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
LCS 160-229522/2-A	Lab Control Sample	106	106
LCSD 160-229522/3-A	Lab Control Sample Dup	80.4	104
MB 160-229522/1-A	Method Blank	109	104

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-80431-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
4/5/2016 9:35:38 AM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-80431-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-80431-1

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.

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.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

RECEIPT

The samples were received on 3/4/2016 at 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.7º C, 10.7º C and 11.0º C.

Two of three coolers arrived at temperatures above the recommended maximum temperature of 6.0 C, at 11.0 C and 10.7 C. However, the coolers were received on ice the same day of collection and are considered acceptable.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/10/2016 and analyzed on 03/11/2016, 03/12/2016 and 03/25/2016.

Barium, Calcium and Cobalt were detected in method blank MB 240-220963/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Boron failed the recovery criteria low for the MS and MSD of sample MW-9D (280-80431-1) in batch 240-223095. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Samples MW-9D (280-80431-1)[100X], MW-9 (280-80431-2)[100X], MW-12 (280-80431-3)[50X], MW-11 (280-80431-4)[50X], MW-6 (280-80431-5)[10X] and MW-8 (280-80431-6)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5), MW-8 (280-80431-6). The continuing calibration blanks and method blanks may not support the lower PQL.

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

TOTAL MERCURY

Job ID: 280-80431-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 03/17/2016.

Mercury was detected in method blank MB 280-316711/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL DISSOLVED SOLIDS

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 03/05/2016.

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

TOTAL SUSPENDED SOLIDS

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 03/08/2016.

The following sample was diluted due to slow filtration and high Total Suspended Solids: MW-8 (280-80431-6). Elevated reporting limits (RLs) are provided.

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

CORROSIVITY (PH)

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 03/08/2016.

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

ANIONS (28 DAYS)

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 03/15/2016 and 03/16/2016.

Samples MW-9D (280-80431-1)[10X], MW-9 (280-80431-2)[20X], MW-11 (280-80431-4)[10X], MW-6 (280-80431-5)[5X] and MW-8 (280-80431-6)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 03/10/2016 and analyzed on 04/01/2016.

The following samples were prepared at a reduced aliquot, due to sediment and discoloration: MW-6 (280-80431-5), MW-8 (280-80431-6).

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

RADIUM-228

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 03/11/2016 and analyzed on

Job ID: 280-80431-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

03/31/2016 and 04/01/2016.

Radium-228 was detected in method blank MB 160-240180/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The following samples were prepared at a reduced aliquot, due to sediment and discoloration: MW-6 (280-80431-5), MW-8 (280-80431-6).

The radium-228 detection goal was not met for the following samples due to the reduced sample volume attributed to the presence of matrix interferences: MW-6 (280-80431-5), MW-8 (280-80431-6), LCS 160-240186/2-A, MB 160-240186/1-A. 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.

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-9D (280-80431-1), MW-9 (280-80431-2), MW-12 (280-80431-3), MW-11 (280-80431-4), MW-6 (280-80431-5) and MW-8 (280-80431-6) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 04/04/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Client Sample ID: MW-9D — Lab Sample ID: 280-80431-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00042	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0014	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.048	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00028	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	110	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00017	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0085	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.15		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00029	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00064	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00014	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	11		2.0	1.1	mg/L	100		6020A	Total Recoverable
Lithium	0.021		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.042	J B	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.96	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.9	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	55		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	540		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-80431-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00045	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0015	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.045	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00036	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	100	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00021	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0082	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.14		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00033	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-9 (Continued) — Lab Sample ID: 280-80431-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00099	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00024	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	12		2.0	1.1	mg/L	100		6020A	Total Recoverable
Lithium	0.020		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.038	J B	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.95	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.8	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	55		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	550		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-80431-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0029	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.096	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00023	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	160	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00012	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.010	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0028	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00072	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00034	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.000094	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	3.4		1.0	0.55	mg/L	50		6020A	Total Recoverable
Lithium	0.0010	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.035	J B	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.52	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.3	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	41		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.41	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	1.1	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	950		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	22		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-80431-4

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Client Sample ID: MW-11 (Continued) — Lab Sample ID: 280-80431-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0021	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.056	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00011	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	220	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000078	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.033	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.045		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0011		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00069	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	2.5		1.0	0.55	mg/L	50		6020A	Total Recoverable
Lithium	0.034		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.040	J B	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.70	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.6	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	100		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	1300		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2800		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-80431-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00048	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0069		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.18	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.0011		0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	270	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00028	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0093	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.026		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0023	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.024		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.015		0.0050	0.00025	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued) — Lab Sample ID: 280-80431-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Thallium	0.00026	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.39		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.076		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.090	J B	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.86	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	23.0	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	280		15	1.3	mg/L	5		9056A	Total/NA
Fluoride	0.14	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	820		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1900		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	240		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-80431-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00021	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0023	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.048	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00027	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	470	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00015	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0025	B	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0090		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00073	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0033		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.010		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.000093	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.63		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.10		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.042	J B	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.57	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.7	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	120		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.064	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2600		130	5.8	mg/L	25		9056A	Total/NA
Total Dissolved Solids (TDS)	4100		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	7900		100	28	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-80431-1	MW-9D	Ground Water	03/03/16 12:00	03/04/16 17:00
280-80431-2	MW-9	Water	03/03/16 12:00	03/04/16 17:00
280-80431-3	MW-12	Ground Water	03/03/16 13:10	03/04/16 17:00
280-80431-4	MW-11	Ground Water	03/03/16 15:15	03/04/16 17:00
280-80431-5	MW-6	Ground Water	03/04/16 12:25	03/04/16 17:00
280-80431-6	MW-8	Ground Water	03/04/16 14:10	03/04/16 17:00

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9D
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00042	J	0.0020	0.00016	mg/L		03/10/16 09:40	03/11/16 23:24	1
Arsenic	0.0014	J	0.0050	0.00049	mg/L		03/10/16 09:40	03/11/16 23:24	1
Barium	0.048	B	0.0050	0.0011	mg/L		03/10/16 09:40	03/11/16 23:24	1
Beryllium	0.00028	J	0.0010	0.000053	mg/L		03/10/16 09:40	03/11/16 23:24	1
Calcium	110	B	1.0	0.24	mg/L		03/10/16 09:40	03/11/16 23:24	1
Cadmium	0.00017	J	0.0010	0.000061	mg/L		03/10/16 09:40	03/11/16 23:24	1
Cobalt	0.0085	B	0.0010	0.000021	mg/L		03/10/16 09:40	03/11/16 23:24	1
Chromium	ND		0.0020	0.00060	mg/L		03/10/16 09:40	03/11/16 23:24	1
Molybdenum	0.15		0.010	0.00023	mg/L		03/10/16 09:40	03/11/16 23:24	1
Lead	0.00029	J	0.0010	0.00011	mg/L		03/10/16 09:40	03/11/16 23:24	1
Selenium	0.00064	J	0.0050	0.00025	mg/L		03/10/16 09:40	03/11/16 23:24	1
Thallium	0.00014	J	0.0010	0.000074	mg/L		03/10/16 09:40	03/11/16 23:24	1
Boron	11		2.0	1.1	mg/L		03/10/16 09:40	03/25/16 01:29	100
Lithium	0.021		0.0080	0.00029	mg/L		03/10/16 09:40	03/11/16 23:24	1

Client Sample ID: MW-9
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00045	J	0.0020	0.00016	mg/L		03/10/16 09:40	03/11/16 23:44	1
Arsenic	0.0015	J	0.0050	0.00049	mg/L		03/10/16 09:40	03/11/16 23:44	1
Barium	0.045	B	0.0050	0.0011	mg/L		03/10/16 09:40	03/11/16 23:44	1
Beryllium	0.00036	J	0.0010	0.000053	mg/L		03/10/16 09:40	03/11/16 23:44	1
Calcium	100	B	1.0	0.24	mg/L		03/10/16 09:40	03/11/16 23:44	1
Cadmium	0.00021	J	0.0010	0.000061	mg/L		03/10/16 09:40	03/11/16 23:44	1
Cobalt	0.0082	B	0.0010	0.000021	mg/L		03/10/16 09:40	03/11/16 23:44	1
Chromium	ND		0.0020	0.00060	mg/L		03/10/16 09:40	03/11/16 23:44	1
Molybdenum	0.14		0.010	0.00023	mg/L		03/10/16 09:40	03/11/16 23:44	1
Lead	0.00033	J	0.0010	0.00011	mg/L		03/10/16 09:40	03/11/16 23:44	1
Selenium	0.00099	J	0.0050	0.00025	mg/L		03/10/16 09:40	03/11/16 23:44	1
Thallium	0.00024	J	0.0010	0.000074	mg/L		03/10/16 09:40	03/11/16 23:44	1
Boron	12		2.0	1.1	mg/L		03/10/16 09:40	03/25/16 01:50	100
Lithium	0.020		0.0080	0.00029	mg/L		03/10/16 09:40	03/11/16 23:44	1

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/10/16 09:40	03/11/16 23:48	1
Arsenic	0.0029	J	0.0050	0.00049	mg/L		03/10/16 09:40	03/11/16 23:48	1
Barium	0.096	B	0.0050	0.0011	mg/L		03/10/16 09:40	03/11/16 23:48	1
Beryllium	0.00023	J	0.0010	0.000053	mg/L		03/10/16 09:40	03/11/16 23:48	1
Calcium	160	B	1.0	0.24	mg/L		03/10/16 09:40	03/11/16 23:48	1
Cadmium	0.00012	J	0.0010	0.000061	mg/L		03/10/16 09:40	03/11/16 23:48	1
Cobalt	0.010	B	0.0010	0.000021	mg/L		03/10/16 09:40	03/11/16 23:48	1
Chromium	ND		0.0020	0.00060	mg/L		03/10/16 09:40	03/11/16 23:48	1
Molybdenum	0.0028	J	0.010	0.00023	mg/L		03/10/16 09:40	03/11/16 23:48	1
Lead	0.00072	J	0.0010	0.00011	mg/L		03/10/16 09:40	03/11/16 23:48	1
Selenium	0.00034	J	0.0050	0.00025	mg/L		03/10/16 09:40	03/11/16 23:48	1
Thallium	0.000094	J	0.0010	0.000074	mg/L		03/10/16 09:40	03/11/16 23:48	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.4		1.0	0.55	mg/L		03/10/16 09:40	03/25/16 01:54	50
Lithium	0.0010	J	0.0080	0.00029	mg/L		03/10/16 09:40	03/11/16 23:48	1

Client Sample ID: MW-11
Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/10/16 09:40	03/12/16 00:00	1
Arsenic	0.0021	J	0.0050	0.00049	mg/L		03/10/16 09:40	03/12/16 00:00	1
Barium	0.056	B	0.0050	0.0011	mg/L		03/10/16 09:40	03/12/16 00:00	1
Beryllium	0.00011	J	0.0010	0.000053	mg/L		03/10/16 09:40	03/12/16 00:00	1
Calcium	220	B	1.0	0.24	mg/L		03/10/16 09:40	03/12/16 00:00	1
Cadmium	0.000078	J	0.0010	0.000061	mg/L		03/10/16 09:40	03/12/16 00:00	1
Cobalt	0.033	B	0.0010	0.000021	mg/L		03/10/16 09:40	03/12/16 00:00	1
Chromium	ND		0.0020	0.00060	mg/L		03/10/16 09:40	03/12/16 00:00	1
Molybdenum	0.045		0.010	0.00023	mg/L		03/10/16 09:40	03/12/16 00:00	1
Lead	0.0011		0.0010	0.00011	mg/L		03/10/16 09:40	03/12/16 00:00	1
Selenium	0.00069	J	0.0050	0.00025	mg/L		03/10/16 09:40	03/12/16 00:00	1
Thallium	ND		0.0010	0.000074	mg/L		03/10/16 09:40	03/12/16 00:00	1
Boron	2.5		1.0	0.55	mg/L		03/10/16 09:40	03/25/16 01:59	50
Lithium	0.034		0.0080	0.00029	mg/L		03/10/16 09:40	03/25/16 02:33	1

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00048	J	0.0020	0.00016	mg/L		03/10/16 09:40	03/12/16 00:05	1
Arsenic	0.0069		0.0050	0.00049	mg/L		03/10/16 09:40	03/12/16 00:05	1
Barium	0.18	B	0.0050	0.0011	mg/L		03/10/16 09:40	03/12/16 00:05	1
Beryllium	0.0011		0.0010	0.000053	mg/L		03/10/16 09:40	03/12/16 00:05	1
Calcium	270	B	1.0	0.24	mg/L		03/10/16 09:40	03/12/16 00:05	1
Cadmium	0.00028	J	0.0010	0.000061	mg/L		03/10/16 09:40	03/12/16 00:05	1
Cobalt	0.0093	B	0.0010	0.000021	mg/L		03/10/16 09:40	03/12/16 00:05	1
Chromium	0.026		0.0020	0.00060	mg/L		03/10/16 09:40	03/12/16 00:05	1
Molybdenum	0.0023	J	0.010	0.00023	mg/L		03/10/16 09:40	03/12/16 00:05	1
Lead	0.024		0.0010	0.00011	mg/L		03/10/16 09:40	03/12/16 00:05	1
Selenium	0.015		0.0050	0.00025	mg/L		03/10/16 09:40	03/12/16 00:05	1
Thallium	0.00026	J	0.0010	0.000074	mg/L		03/10/16 09:40	03/12/16 00:05	1
Boron	0.39		0.20	0.11	mg/L		03/10/16 09:40	03/25/16 02:11	10
Lithium	0.076		0.0080	0.00029	mg/L		03/10/16 09:40	03/25/16 02:37	1

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00021	J	0.0020	0.00016	mg/L		03/10/16 09:40	03/12/16 00:09	1
Arsenic	0.0023	J	0.0050	0.00049	mg/L		03/10/16 09:40	03/12/16 00:09	1
Barium	0.048	B	0.0050	0.0011	mg/L		03/10/16 09:40	03/12/16 00:09	1
Beryllium	0.00027	J	0.0010	0.000053	mg/L		03/10/16 09:40	03/12/16 00:09	1
Calcium	470	B	1.0	0.24	mg/L		03/10/16 09:40	03/12/16 00:09	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00015	J	0.0010	0.000061	mg/L		03/10/16 09:40	03/12/16 00:09	1
Cobalt	0.0025	B	0.0010	0.000021	mg/L		03/10/16 09:40	03/12/16 00:09	1
Chromium	0.0090		0.0020	0.00060	mg/L		03/10/16 09:40	03/12/16 00:09	1
Molybdenum	0.00073	J	0.010	0.00023	mg/L		03/10/16 09:40	03/12/16 00:09	1
Lead	0.0033		0.0010	0.00011	mg/L		03/10/16 09:40	03/12/16 00:09	1
Selenium	0.010		0.0050	0.00025	mg/L		03/10/16 09:40	03/12/16 00:09	1
Thallium	0.000093	J	0.0010	0.000074	mg/L		03/10/16 09:40	03/12/16 00:09	1
Boron	0.63		0.20	0.11	mg/L		03/10/16 09:40	03/25/16 02:16	10
Lithium	0.10		0.0080	0.00029	mg/L		03/10/16 09:40	03/25/16 02:41	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-9D
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.042	J B	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 20:06	1

Client Sample ID: MW-9
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.038	J B	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 20:08	1

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.035	J B	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 20:10	1

Client Sample ID: MW-11
Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	J B	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 20:13	1

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.090	J B	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 20:15	1

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.042	J B	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 20:17	1

General Chemistry

Client Sample ID: MW-9D
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.96	HF	0.100	0.100	SU			03/08/16 21:02	1
Temperature	22.9	HF	1.00	1.00	Degrees C			03/08/16 21:02	1
Chloride	55		3.0	0.25	mg/L			03/15/16 14:35	1
Fluoride	2.8		0.50	0.060	mg/L			03/15/16 14:35	1
Sulfate	540		50	2.3	mg/L			03/16/16 02:58	10
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			03/05/16 12:55	1
Total Suspended Solids	2.8	J	4.0	1.1	mg/L			03/08/16 16:34	1

Client Sample ID: MW-9
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.95	HF	0.100	0.100	SU			03/08/16 20:52	1
Temperature	22.8	HF	1.00	1.00	Degrees C			03/08/16 20:52	1
Chloride	55		3.0	0.25	mg/L			03/15/16 14:52	1
Fluoride	2.8		0.50	0.060	mg/L			03/15/16 14:52	1
Sulfate	550		100	4.6	mg/L			03/15/16 15:10	20
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			03/05/16 12:55	1
Total Suspended Solids	ND		4.0	1.1	mg/L			03/08/16 16:34	1

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.52	HF	0.100	0.100	SU			03/08/16 20:37	1
Temperature	22.3	HF	1.00	1.00	Degrees C			03/08/16 20:37	1
Chloride	41		3.0	0.25	mg/L			03/15/16 16:03	1
Fluoride	0.41	J	0.50	0.060	mg/L			03/15/16 16:03	1
Sulfate	1.1	J	5.0	0.23	mg/L			03/15/16 16:03	1
Total Dissolved Solids (TDS)	950		10	4.7	mg/L			03/05/16 12:55	1
Total Suspended Solids	22		4.0	1.1	mg/L			03/08/16 16:34	1

Client Sample ID: MW-11
Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.70	HF	0.100	0.100	SU			03/08/16 20:47	1
Temperature	22.6	HF	1.00	1.00	Degrees C			03/08/16 20:47	1
Chloride	100		3.0	0.25	mg/L			03/15/16 16:21	1
Fluoride	2.8		0.50	0.060	mg/L			03/15/16 16:21	1
Sulfate	1300		50	2.3	mg/L			03/16/16 03:16	10
Total Dissolved Solids (TDS)	2800		20	9.4	mg/L			03/05/16 12:55	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			03/08/16 16:34	1

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.86	HF	0.100	0.100	SU			03/08/16 20:57	1
Temperature	23.0	HF	1.00	1.00	Degrees C			03/08/16 20:57	1

General Chemistry (Continued)

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	280		15	1.3	mg/L			03/16/16 03:34	5
Fluoride	0.14	J	0.50	0.060	mg/L			03/15/16 16:39	1
Sulfate	820		25	1.2	mg/L			03/16/16 03:34	5
Total Dissolved Solids (TDS)	1900		10	4.7	mg/L			03/05/16 12:55	1
Total Suspended Solids	240		4.0	1.1	mg/L			03/08/16 16:34	1

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.57	HF	0.100	0.100	SU			03/08/16 20:24	1
Temperature	22.7	HF	1.00	1.00	Degrees C			03/08/16 20:24	1
Chloride	120		3.0	0.25	mg/L			03/15/16 16:56	1
Fluoride	0.064	J	0.50	0.060	mg/L			03/15/16 16:56	1
Sulfate	2600		130	5.8	mg/L			03/16/16 03:51	25
Total Dissolved Solids (TDS)	4100		40	19	mg/L			03/05/16 12:55	1
Total Suspended Solids	7900		100	28	mg/L			03/08/16 16:34	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9D
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.200		0.124	0.126	1.00	0.170	pCi/L	03/10/16 19:17	04/01/16 07:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.9*		*40 - 110*	*03/10/16 19:17*	*04/01/16 07:30*	*1*

Client Sample ID: MW-9
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.199		0.108	0.110	1.00	0.132	pCi/L	03/10/16 19:17	04/01/16 07:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*03/10/16 19:17*	*04/01/16 07:30*	*1*

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.163		0.112	0.113	1.00	0.156	pCi/L	03/10/16 19:17	04/01/16 07:30	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110	03/10/16 19:17	04/01/16 07:30	1

Client Sample ID: MW-11
Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.240		0.116	0.118	1.00	0.130	pCi/L	03/10/16 19:17	04/01/16 07:30	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	03/10/16 19:17	04/01/16 07:30	1

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.37		0.609	0.621	1.00	0.675	pCi/L	03/10/16 17:33	04/01/16 19:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110	03/10/16 17:33	04/01/16 19:50	1

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.691		0.314	0.320	1.00	0.364	pCi/L	03/10/16 17:33	04/01/16 19:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110	03/10/16 17:33	04/01/16 19:50	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-9D
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.359		0.234	0.237	1.00	0.358	pCi/L	03/11/16 19:06	03/31/16 11:12	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.9		40 - 110	03/11/16 19:06	03/31/16 11:12	1
Y Carrier	81.9		40 - 110	03/11/16 19:06	03/31/16 11:12	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-9
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.333		0.211	0.213	1.00	0.319	pCi/L	03/11/16 19:06	03/31/16 11:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*03/11/16 19:06*	*03/31/16 11:13*	*1*
Y Carrier	*87.1*		*40 - 110*	*03/11/16 19:06*	*03/31/16 11:13*	*1*

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.294	U	0.225	0.227	1.00	0.352	pCi/L	03/11/16 19:06	03/31/16 11:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*03/11/16 19:06*	*03/31/16 11:13*	*1*
Y Carrier	*83.0*		*40 - 110*	*03/11/16 19:06*	*03/31/16 11:13*	*1*

Client Sample ID: MW-11
Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.357	U	0.241	0.243	1.00	0.371	pCi/L	03/11/16 19:06	03/31/16 11:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*03/11/16 19:06*	*03/31/16 11:13*	*1*
Y Carrier	*84.9*		*40 - 110*	*03/11/16 19:06*	*03/31/16 11:13*	*1*

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.06	U G	1.13	1.13	1.00	1.84	pCi/L	03/11/16 20:10	04/01/16 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*03/11/16 20:10*	*04/01/16 11:47*	*1*
Y Carrier	*86.7*		*40 - 110*	*03/11/16 20:10*	*04/01/16 11:47*	*1*

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.12	G	0.684	0.691	1.00	1.05	pCi/L	03/11/16 20:10	04/01/16 11:47	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110	03/11/16 20:10	04/01/16 11:47	1
Y Carrier	84.9		40 - 110	03/11/16 20:10	04/01/16 11:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-9D
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.558		0.265	0.268	5.00	0.358	pCi/L		04/04/16 16:08	1

Client Sample ID: MW-9
Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.532		0.237	0.239	5.00	0.319	pCi/L		04/04/16 16:08	1

Client Sample ID: MW-12
Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.457		0.251	0.253	5.00	0.352	pCi/L		04/04/16 16:08	1

Client Sample ID: MW-11
Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.597		0.267	0.270	5.00	0.371	pCi/L		04/04/16 16:08	1

Client Sample ID: MW-6
Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.43		1.28	1.29	5.00	1.84	pCi/L		04/04/16 16:08	1

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-8
Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.81		0.752	0.762	5.00	1.05	pCi/L		04/04/16 16:08	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-220963/1-A
Matrix: Water
Analysis Batch: 221391

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/10/16 09:40	03/11/16 23:16	1
Arsenic	ND		0.0050	0.00049	mg/L		03/10/16 09:40	03/11/16 23:16	1
Barium	0.00204	J	0.0050	0.0011	mg/L		03/10/16 09:40	03/11/16 23:16	1
Beryllium	ND		0.0010	0.000053	mg/L		03/10/16 09:40	03/11/16 23:16	1
Calcium	0.594	J	1.0	0.24	mg/L		03/10/16 09:40	03/11/16 23:16	1
Cadmium	ND		0.0010	0.000061	mg/L		03/10/16 09:40	03/11/16 23:16	1
Cobalt	0.0000310	J	0.0010	0.000021	mg/L		03/10/16 09:40	03/11/16 23:16	1
Chromium	ND		0.0020	0.00060	mg/L		03/10/16 09:40	03/11/16 23:16	1
Molybdenum	ND		0.010	0.00023	mg/L		03/10/16 09:40	03/11/16 23:16	1
Lead	ND		0.0010	0.00011	mg/L		03/10/16 09:40	03/11/16 23:16	1
Selenium	ND		0.0050	0.00025	mg/L		03/10/16 09:40	03/11/16 23:16	1
Thallium	ND		0.0010	0.000074	mg/L		03/10/16 09:40	03/11/16 23:16	1
Lithium	ND		0.0080	0.00029	mg/L		03/10/16 09:40	03/11/16 23:16	1

Lab Sample ID: MB 240-220963/1-A
Matrix: Water
Analysis Batch: 223095

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020	0.011	mg/L		03/10/16 09:40	03/25/16 01:20	1

Lab Sample ID: LCS 240-220963/2-A
Matrix: Water
Analysis Batch: 221391

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0930		mg/L		93	80 - 120
Arsenic	1.00	0.924		mg/L		92	80 - 120
Barium	1.00	0.921		mg/L		92	80 - 120
Beryllium	1.00	0.994		mg/L		99	80 - 120
Calcium	10.0	9.34		mg/L		93	80 - 120
Cadmium	1.00	0.933		mg/L		93	80 - 120
Cobalt	1.00	1.01		mg/L		101	80 - 120
Chromium	1.00	0.967		mg/L		97	80 - 120
Molybdenum	0.100	0.0929		mg/L		93	80 - 120
Lead	1.00	1.03		mg/L		103	80 - 120
Selenium	1.00	0.921		mg/L		92	80 - 120
Thallium	0.250	0.257		mg/L		103	80 - 120
Lithium	0.100	0.0890		mg/L		89	80 - 120

Lab Sample ID: LCS 240-220963/2-A
Matrix: Water
Analysis Batch: 223095

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.0898		mg/L		90	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-80431-1 MS
Matrix: Ground Water
Analysis Batch: 221391

Client Sample ID: MW-9D
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00042	J	0.100	0.0958		mg/L		95	75 - 125
Arsenic	0.0014	J	1.00	0.969		mg/L		97	75 - 125
Barium	0.048	B	1.00	0.998		mg/L		95	75 - 125
Beryllium	0.00028	J	1.00	0.966		mg/L		97	75 - 125
Calcium	110	B	10.0	113	4	mg/L		82	75 - 125
Cadmium	0.00017	J	1.00	0.931		mg/L		93	75 - 125
Cobalt	0.0085	B	1.00	0.989		mg/L		98	75 - 125
Chromium	ND		1.00	0.989		mg/L		99	75 - 125
Molybdenum	0.15		0.100	0.245		mg/L		97	75 - 125
Lead	0.00029	J	1.00	1.01		mg/L		100	75 - 125
Selenium	0.00064	J	1.00	0.942		mg/L		94	75 - 125
Thallium	0.00014	J	0.250	0.255		mg/L		102	75 - 125
Lithium	0.021		0.100	0.105		mg/L		84	75 - 125

Lab Sample ID: 280-80431-1 MS
Matrix: Ground Water
Analysis Batch: 223095

Client Sample ID: MW-9D
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	11		0.100	11.4	4	mg/L		74	75 - 125

Lab Sample ID: 280-80431-1 MSD
Matrix: Ground Water
Analysis Batch: 221391

Client Sample ID: MW-9D
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00042	J	0.100	0.0960		mg/L		96	75 - 125	0	20
Arsenic	0.0014	J	1.00	0.977		mg/L		98	75 - 125	1	20
Barium	0.048	B	1.00	0.996		mg/L		95	75 - 125	0	20
Beryllium	0.00028	J	1.00	0.922		mg/L		92	75 - 125	5	20
Calcium	110	B	10.0	114	4	mg/L		91	75 - 125	1	20
Cadmium	0.00017	J	1.00	0.933		mg/L		93	75 - 125	0	20
Cobalt	0.0085	B	1.00	0.989		mg/L		98	75 - 125	0	20
Chromium	ND		1.00	0.976		mg/L		98	75 - 125	1	20
Molybdenum	0.15		0.100	0.248		mg/L		100	75 - 125	1	20
Lead	0.00029	J	1.00	1.01		mg/L		101	75 - 125	0	20
Selenium	0.00064	J	1.00	0.940		mg/L		94	75 - 125	0	20
Thallium	0.00014	J	0.250	0.252		mg/L		101	75 - 125	1	20
Lithium	0.021		0.100	0.103		mg/L		82	75 - 125	2	20

Lab Sample ID: 280-80431-1 MSD
Matrix: Ground Water
Analysis Batch: 223095

Client Sample ID: MW-9D
Prep Type: Total Recoverable
Prep Batch: 220963

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	11		0.100	11.2	4	mg/L		-125	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-316711/1-A
Matrix: Water
Analysis Batch: 317343

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316711

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0450	J	0.20	0.027	ug/L		03/17/16 10:55	03/17/16 19:26	1

Lab Sample ID: LCS 280-316711/2-A
Matrix: Water
Analysis Batch: 317343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316711

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.24		ug/L		105	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-316344/27
Matrix: Water
Analysis Batch: 316344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	6.990		SU		100	99 - 101

Lab Sample ID: LCS 280-316344/4
Matrix: Water
Analysis Batch: 316344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	6.970		SU		100	99 - 101

Lab Sample ID: 280-80431-3 DU
Matrix: Ground Water
Analysis Batch: 316344

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.52	HF	7.540		SU		0.3	5
Temperature	22.3	HF	22.43		Degrees C		0.6	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-316898/6
Matrix: Water
Analysis Batch: 316898

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			03/15/16 11:50	1
Fluoride	ND		0.50	0.060	mg/L			03/15/16 11:50	1
Sulfate	ND		5.0	0.23	mg/L			03/15/16 11:50	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-316898/4
Matrix: Water
Analysis Batch: 316898

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.3		mg/L		99	90 - 110
Fluoride	5.00	5.08		mg/L		102	90 - 110
Sulfate	100	99.2		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-316898/5
Matrix: Water
Analysis Batch: 316898

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.0		mg/L		99	90 - 110	0	10
Fluoride	5.00	5.10		mg/L		102	90 - 110	0	10
Sulfate	100	98.9		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-316898/3
Matrix: Water
Analysis Batch: 316898

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.53	J	mg/L		101	50 - 150
Fluoride	0.200	0.165	J	mg/L		82	50 - 150
Sulfate	2.50	2.52	J	mg/L		101	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-315950/1
Matrix: Water
Analysis Batch: 315950

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			03/05/16 12:55	1

Lab Sample ID: LCS 280-315950/2
Matrix: Water
Analysis Batch: 315950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	494		mg/L		99	86 - 110

Lab Sample ID: LCSD 280-315950/3
Matrix: Water
Analysis Batch: 315950

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	500	496		mg/L		99	86 - 110	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-316199/3
Matrix: Water
Analysis Batch: 316199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			03/08/16 16:34	1

Lab Sample ID: LCS 280-316199/1
Matrix: Water
Analysis Batch: 316199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	88.8		mg/L		89	86 - 114

Lab Sample ID: LCSD 280-316199/2
Matrix: Water
Analysis Batch: 316199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	100	94.0		mg/L		94	86 - 114	6	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-240000/1-A
Matrix: Water
Analysis Batch: 243315

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240000

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.08563	U	0.199	0.199	1.00	0.431	pCi/L	03/10/16 17:33	04/01/16 19:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.7*		*40 - 110*	*03/10/16 17:33*	*04/01/16 19:48*	*1*

Lab Sample ID: LCS 160-240000/2-A
Matrix: Water
Analysis Batch: 243315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240000

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	22.3	26.42		2.93	1.00	0.449	pCi/L	118	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*80.1*		*40 - 110*

Lab Sample ID: MB 160-240005/1-A
Matrix: Water
Analysis Batch: 243314

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240005

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03705	U	0.125	0.125	1.00	0.249	pCi/L	03/10/16 19:17	04/01/16 07:22	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-240005/1-A
Matrix: Water
Analysis Batch: 243314

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240005

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		40 - 110	03/10/16 19:17	04/01/16 07:22	1

Lab Sample ID: LCS 160-240005/2-A
Matrix: Water
Analysis Batch: 243358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240005

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.36		1.32	1.00	0.0966	pCi/L	120	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	100		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-240180/1-A
Matrix: Water
Analysis Batch: 243038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240180

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4209		0.260	0.262	1.00	0.395	pCi/L	03/11/16 19:06	03/31/16 10:59	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		40 - 110	03/11/16 19:06	03/31/16 10:59	1
Y Carrier	84.5		40 - 110	03/11/16 19:06	03/31/16 10:59	1

Lab Sample ID: LCS 160-240180/2-A
Matrix: Water
Analysis Batch: 243038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240180

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.4	16.39		1.75	1.00	0.434	pCi/L	107	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	78.1		40 - 110

Lab Sample ID: MB 160-240186/1-A
Matrix: Water
Analysis Batch: 243219

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240186

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2655	U G	0.643	0.644	1.00	1.10	pCi/L	03/11/16 20:10	04/01/16 11:46	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-240186/1-A
Matrix: Water
Analysis Batch: 243219

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240186

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.7		40 - 110	03/11/16 20:10	04/01/16 11:46	1
Y Carrier	83.4		40 - 110	03/11/16 20:10	04/01/16 11:46	1

Lab Sample ID: LCS 160-240186/2-A
Matrix: Water
Analysis Batch: 243219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240186

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			30.8	35.58		3.92	1.00	1.15	pCi/L	116	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	80.1		40 - 110
Y Carrier	85.2		40 - 110

Metals

Prep Batch: 220963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total Recoverable	Ground Water	3005A	
280-80431-1 MS	MW-9D	Total Recoverable	Ground Water	3005A	
280-80431-1 MSD	MW-9D	Total Recoverable	Ground Water	3005A	
280-80431-2	MW-9	Total Recoverable	Water	3005A	
280-80431-3	MW-12	Total Recoverable	Ground Water	3005A	
280-80431-4	MW-11	Total Recoverable	Ground Water	3005A	
280-80431-5	MW-6	Total Recoverable	Ground Water	3005A	
280-80431-6	MW-8	Total Recoverable	Ground Water	3005A	
LCS 240-220963/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-220963/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 221391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total Recoverable	Ground Water	6020A	220963
280-80431-1 MS	MW-9D	Total Recoverable	Ground Water	6020A	220963
280-80431-1 MSD	MW-9D	Total Recoverable	Ground Water	6020A	220963
280-80431-2	MW-9	Total Recoverable	Water	6020A	220963
280-80431-3	MW-12	Total Recoverable	Ground Water	6020A	220963
280-80431-4	MW-11	Total Recoverable	Ground Water	6020A	220963
280-80431-5	MW-6	Total Recoverable	Ground Water	6020A	220963
280-80431-6	MW-8	Total Recoverable	Ground Water	6020A	220963
LCS 240-220963/2-A	Lab Control Sample	Total Recoverable	Water	6020A	220963
MB 240-220963/1-A	Method Blank	Total Recoverable	Water	6020A	220963

Analysis Batch: 223095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total Recoverable	Ground Water	6020A	220963
280-80431-1 MS	MW-9D	Total Recoverable	Ground Water	6020A	220963
280-80431-1 MSD	MW-9D	Total Recoverable	Ground Water	6020A	220963
280-80431-2	MW-9	Total Recoverable	Water	6020A	220963
280-80431-3	MW-12	Total Recoverable	Ground Water	6020A	220963
280-80431-4	MW-11	Total Recoverable	Ground Water	6020A	220963
280-80431-4	MW-11	Total Recoverable	Ground Water	6020A	220963
280-80431-5	MW-6	Total Recoverable	Ground Water	6020A	220963
280-80431-5	MW-6	Total Recoverable	Ground Water	6020A	220963
280-80431-6	MW-8	Total Recoverable	Ground Water	6020A	220963
280-80431-6	MW-8	Total Recoverable	Ground Water	6020A	220963
LCS 240-220963/2-A	Lab Control Sample	Total Recoverable	Water	6020A	220963
MB 240-220963/1-A	Method Blank	Total Recoverable	Water	6020A	220963

Prep Batch: 316711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	7470A	
280-80431-2	MW-9	Total/NA	Water	7470A	
280-80431-3	MW-12	Total/NA	Ground Water	7470A	
280-80431-4	MW-11	Total/NA	Ground Water	7470A	
280-80431-5	MW-6	Total/NA	Ground Water	7470A	
280-80431-6	MW-8	Total/NA	Ground Water	7470A	
LCS 280-316711/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-316711/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Analysis Batch: 317343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	7470A	316711
280-80431-2	MW-9	Total/NA	Water	7470A	316711
280-80431-3	MW-12	Total/NA	Ground Water	7470A	316711
280-80431-4	MW-11	Total/NA	Ground Water	7470A	316711
280-80431-5	MW-6	Total/NA	Ground Water	7470A	316711
280-80431-6	MW-8	Total/NA	Ground Water	7470A	316711
LCS 280-316711/2-A	Lab Control Sample	Total/NA	Water	7470A	316711
MB 280-316711/1-A	Method Blank	Total/NA	Water	7470A	316711

General Chemistry

Analysis Batch: 315950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	SM 2540C	
280-80431-2	MW-9	Total/NA	Water	SM 2540C	
280-80431-3	MW-12	Total/NA	Ground Water	SM 2540C	
280-80431-4	MW-11	Total/NA	Ground Water	SM 2540C	
280-80431-5	MW-6	Total/NA	Ground Water	SM 2540C	
280-80431-6	MW-8	Total/NA	Ground Water	SM 2540C	
LCS 280-315950/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-315950/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-315950/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 316199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	SM 2540D	
280-80431-2	MW-9	Total/NA	Water	SM 2540D	
280-80431-3	MW-12	Total/NA	Ground Water	SM 2540D	
280-80431-4	MW-11	Total/NA	Ground Water	SM 2540D	
280-80431-5	MW-6	Total/NA	Ground Water	SM 2540D	
280-80431-6	MW-8	Total/NA	Ground Water	SM 2540D	
LCS 280-316199/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-316199/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
MB 280-316199/3	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 316344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	9040B	
280-80431-2	MW-9	Total/NA	Water	9040B	
280-80431-3	MW-12	Total/NA	Ground Water	9040B	
280-80431-3 DU	MW-12	Total/NA	Ground Water	9040B	
280-80431-4	MW-11	Total/NA	Ground Water	9040B	
280-80431-5	MW-6	Total/NA	Ground Water	9040B	
280-80431-6	MW-8	Total/NA	Ground Water	9040B	
LCS 280-316344/27	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-316344/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 316898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	9056A	

General Chemistry (Continued)

Analysis Batch: 316898 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	9056A	
280-80431-2	MW-9	Total/NA	Water	9056A	
280-80431-2	MW-9	Total/NA	Water	9056A	
280-80431-3	MW-12	Total/NA	Ground Water	9056A	
280-80431-4	MW-11	Total/NA	Ground Water	9056A	
280-80431-4	MW-11	Total/NA	Ground Water	9056A	
280-80431-5	MW-6	Total/NA	Ground Water	9056A	
280-80431-5	MW-6	Total/NA	Ground Water	9056A	
280-80431-6	MW-8	Total/NA	Ground Water	9056A	
280-80431-6	MW-8	Total/NA	Ground Water	9056A	
LCS 280-316898/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-316898/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-316898/6	Method Blank	Total/NA	Water	9056A	
MRL 280-316898/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 240000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-5	MW-6	Total/NA	Ground Water	PrecSep-21	
280-80431-6	MW-8	Total/NA	Ground Water	PrecSep-21	
LCS 160-240000/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-240000/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 240005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	PrecSep-21	
280-80431-2	MW-9	Total/NA	Water	PrecSep-21	
280-80431-3	MW-12	Total/NA	Ground Water	PrecSep-21	
280-80431-4	MW-11	Total/NA	Ground Water	PrecSep-21	
LCS 160-240005/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-240005/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 240180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-1	MW-9D	Total/NA	Ground Water	PrecSep_0	
280-80431-2	MW-9	Total/NA	Water	PrecSep_0	
280-80431-3	MW-12	Total/NA	Ground Water	PrecSep_0	
280-80431-4	MW-11	Total/NA	Ground Water	PrecSep_0	
LCS 160-240180/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-240180/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 240186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80431-5	MW-6	Total/NA	Ground Water	PrecSep_0	
280-80431-6	MW-8	Total/NA	Ground Water	PrecSep_0	
LCS 160-240186/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-240186/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Client Sample ID: MW-9D

Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	221391	03/11/16 23:24	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		100	50 mL	50 mL	223095	03/25/16 01:29	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	316711	03/17/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317343	03/17/16 20:06	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 21:02	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	316898	03/15/16 14:35	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	316898	03/16/16 02:58	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	315950	03/05/16 12:55	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316199	03/08/16 16:34	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			959.90 mL	1.0 g	240005	03/10/16 19:17	CMC	TAL SL
Total/NA	Analysis	9315		1	959.90 mL		243315	04/01/16 07:30	ALS	TAL SL
Total/NA	Prep	PrecSep_0			959.90 mL	1.0 g	240180	03/11/16 19:06	CMC	TAL SL
Total/NA	Analysis	9320		1	959.90 mL		243029	03/31/16 11:12	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244092	04/04/16 16:08	CAH	TAL SL

Client Sample ID: MW-9

Date Collected: 03/03/16 12:00
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	221391	03/11/16 23:44	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		100	50 mL	50 mL	223095	03/25/16 01:50	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	316711	03/17/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317343	03/17/16 20:08	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 20:52	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	316898	03/15/16 14:52	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	316898	03/15/16 15:10	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	315950	03/05/16 12:55	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316199	03/08/16 16:34	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			963.98 mL	1.0 g	240005	03/10/16 19:17	CMC	TAL SL
Total/NA	Analysis	9315		1	963.98 mL		243315	04/01/16 07:30	ALS	TAL SL
Total/NA	Prep	PrecSep_0			963.98 mL	1.0 g	240180	03/11/16 19:06	CMC	TAL SL
Total/NA	Analysis	9320		1	963.98 mL		243029	03/31/16 11:13	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244092	04/04/16 16:08	CAH	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Client Sample ID: MW-12

Date Collected: 03/03/16 13:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	221391	03/11/16 23:48	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		50	50 mL	50 mL	223095	03/25/16 01:54	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	316711	03/17/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317343	03/17/16 20:10	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 20:37	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	316898	03/15/16 16:03	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	315950	03/05/16 12:55	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316199	03/08/16 16:34	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			968.02 mL	1.0 g	240005	03/10/16 19:17	CMC	TAL SL
Total/NA	Analysis	9315		1	968.02 mL		243315	04/01/16 07:30	ALS	TAL SL
Total/NA	Prep	PrecSep_0			968.02 mL	1.0 g	240180	03/11/16 19:06	CMC	TAL SL
Total/NA	Analysis	9320		1	968.02 mL		243029	03/31/16 11:13	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244092	04/04/16 16:08	CAH	TAL SL

Client Sample ID: MW-11

Date Collected: 03/03/16 15:15
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	221391	03/12/16 00:00	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		50	50 mL	50 mL	223095	03/25/16 01:59	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	223095	03/25/16 02:33	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	316711	03/17/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317343	03/17/16 20:13	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 20:47	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	316898	03/15/16 16:21	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	316898	03/16/16 03:16	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	315950	03/05/16 12:55	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316199	03/08/16 16:34	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			983.15 mL	1.0 g	240005	03/10/16 19:17	CMC	TAL SL
Total/NA	Analysis	9315		1	983.15 mL		243315	04/01/16 07:30	ALS	TAL SL
Total/NA	Prep	PrecSep_0			983.15 mL	1.0 g	240180	03/11/16 19:06	CMC	TAL SL
Total/NA	Analysis	9320		1	983.15 mL		243029	03/31/16 11:13	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244092	04/04/16 16:08	CAH	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Client Sample ID: MW-6

Date Collected: 03/04/16 12:25
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	221391	03/12/16 00:05	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	223095	03/25/16 02:11	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	223095	03/25/16 02:37	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	316711	03/17/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317343	03/17/16 20:15	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 20:57	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	316898	03/15/16 16:39	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	316898	03/16/16 03:34	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	315950	03/05/16 12:55	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316199	03/08/16 16:34	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			250.71 mL	1.0 g	240000	03/10/16 17:33	CMC	TAL SL
Total/NA	Analysis	9315		1	250.71 mL		243315	04/01/16 19:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			250.71 mL	1.0 g	240186	03/11/16 20:10	CMC	TAL SL
Total/NA	Analysis	9320		1	250.71 mL		243219	04/01/16 11:47	MFM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244092	04/04/16 16:08	CAH	TAL SL

Client Sample ID: MW-8

Date Collected: 03/04/16 14:10
Date Received: 03/04/16 17:00

Lab Sample ID: 280-80431-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	221391	03/12/16 00:09	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	223095	03/25/16 02:16	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	220963	03/10/16 09:40	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	223095	03/25/16 02:41	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	316711	03/17/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317343	03/17/16 20:17	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 20:24	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	316898	03/15/16 16:56	AFB	TAL DEN
Total/NA	Analysis	9056A		25	5 mL	5 mL	316898	03/16/16 03:51	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	315950	03/05/16 12:55	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	10 mL	250 mL	316199	03/08/16 16:34	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			500.05 mL	1.0 g	240000	03/10/16 17:33	CMC	TAL SL
Total/NA	Analysis	9315		1	500.05 mL		243315	04/01/16 19:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			500.05 mL	1.0 g	240186	03/11/16 20:10	CMC	TAL SL
Total/NA	Analysis	9320		1	500.05 mL		243219	04/01/16 11:47	MFM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244092	04/04/16 16:08	CAH	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Ground Water	Mercury
7470A	7470A	Water	Mercury
9040B		Ground Water	Temperature
9040B		Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-16
Illinois	NELAP	5	200004	07-31-16
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16
New Jersey	NELAP	2	OH001	06-30-16 *
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16 *
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:	Analysis Requested		
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code				N	D	N	N	D		
~~Field Duplicate~~ 563/4 MW-9D	3/3/16	1200	G	Water	N	N	1	2	1	1	2	7	
~~Equipment Blank~~ 563/4 MW-9	3/3/16	1200	G	Water	N	N	1	2	1	1	2	7	
MW-12	3/3/16	1310	G	water	N	N	1	2	1	1	2	7	
MW-11	3/3/16	1515	G	water	N	N	1	2	1	1	2	7	
MW-6	3/4/16	1225	G	water	N	N	1	2	1	1	2	7	
MW-8	3/4/16	1410	G	water	N	N	1	2	1	1	2	7	

3/4/16

280-80431 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	3/4/16 1700		Received by:	3-4-16 1700	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		3.9, 11.2, 10.9-0.2 IR#7 Transfered by DW 3/4/16

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-341982.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-80431-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-9D (280-80431-1)	3/3/16	12:00 Mountain		Water			X	X	2	
MW-9 (280-80431-2)	3/3/16	12:00 Mountain		Water			X	X	2	
MW-12 (280-80431-3)	3/3/16	13:10 Mountain		Water			X	X	2	
MW-11 (280-80431-4)	3/3/16	15:15 Mountain		Water			X	X	2	
MW-6 (280-80431-5)	3/4/16	12:25 Mountain		Water			X	X	2	
MW-8 (280-80431-6)	3/4/16	14:10 Mountain		Water			X	X	2	

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

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

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 3/7/16 1535	Company TA	Received by:	Date/Time: 3.8.16 0825	Company TA 572
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

1.6(C).1

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-341983.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-80431-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 3/28/2016			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						541
MW-9D (280-80431-1)	3/3/16	12:00 Mountain		Water			X	1	Use Collision Cell
MW-9 (280-80431-2)	3/3/16	12:00 Mountain		Water			X	1	Use Collision Cell
MW-12 (280-80431-3)	3/3/16	13:10 Mountain		Water			X	1	Use Collision Cell
MW-11 (280-80431-4)	3/3/16	15:15 Mountain		Water			X	1	Use Collision Cell
MW-6 (280-80431-5)	3/4/16	12:25 Mountain		Water			X	1	Use Collision Cell
MW-8 (280-80431-6)	3/4/16	14:10 Mountain		Water			X	1	Use Collision Cell

Possible Hazard Identification
Unconfirmed

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

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

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	3/7/16 15:55	TA	[signature]	3-8-16 740	TA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

4/5/2016

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client Denver Site Name _____ Cooler unpacked by:

Cooler Received on 3-8-16 Opened on 3-8-16

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box (Client Cooler) Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   - IR GUN# 48 (CF **-1.9** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   - IR GUN# 36 (CF **-1.5** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   - IR GUN# I8 (CF **-0.5** °C) Observed Cooler Temp. 1.6 °C Corrected Cooler Temp. 1.1 °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2 (Yes) No
   - -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   - -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes (No)
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Are these work share samples? (Yes) No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# **HC559158**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-80431-1

Login Number: 80431
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
Cooler Temperature is acceptable.	True	Received same day of collection; chilling process has begun.
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-80431-1

Login Number: 80431
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 03/08/16 01:52 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7, 2.3, 2.1, 1.9
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-80431-1	MW-9D	98.9
280-80431-3	MW-12	92.3
280-80431-4	MW-11	94.0
280-80431-5	MW-6	90.3
280-80431-6	MW-8	90.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-80431-2	MW-9	99.4
LCS 160-240000/2-A	Lab Control Sample	80.1
LCS 160-240005/2-A	Lab Control Sample	100
MB 160-240000/1-A	Method Blank	95.7
MB 160-240005/1-A	Method Blank	88.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-80431-1	MW-9D	98.9	81.9
280-80431-3	MW-12	92.3	83.0
280-80431-4	MW-11	94.0	84.9
280-80431-5	MW-6	90.3	86.7
280-80431-6	MW-8	90.3	84.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-80431-2	MW-9	99.4	87.1
LCS 160-240180/2-A	Lab Control Sample	100	78.1
LCS 160-240186/2-A	Lab Control Sample	80.1	85.2
MB 160-240180/1-A	Method Blank	88.9	84.5

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80431-1

Method: 9320 - Radium-228 (GFPC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)									
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)								
MB 160-240186/1-A	Method Blank	95.7	83.4								

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-80491-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
4/7/2016 10:15:17 AM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-80491-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-80491-1

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.

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.

RECEIPT

The samples were received on 3/8/2016 at 8:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.1° C and 4.6° C.

Sample MW-1P (280-80491-5) was received with one 1L poly container with HNO3 preservative that did not have a sample time on the container; the sample was logged per the COC.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/11/2016 and analyzed on 03/18/2016 and 03/19/2016.

Lead was detected in method blank MB 240-221151/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples MW-7 (280-80491-1)[5X], MW-1 (280-80491-2)[5X], MW-3 (280-80491-3)[20X], MW-10 (280-80491-4)[100X] and MW-1P (280-80491-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 03/18/2016.

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

TOTAL DISSOLVED SOLIDS

Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 03/09/2016.

Constant weight was not achieved after 4 drying cycles for the following samples: MW-3 (280-80491-3), MW-10 (280-80491-4).

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

Job ID: 280-80491-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

TOTAL SUSPENDED SOLIDS
Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 03/10/2016.

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

CORROSIVITY (PH)
Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 03/08/2016.

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

ANIONS (28 DAYS)
Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 03/18/2016 and 03/19/2016.

Samples MW-1 (280-80491-2)[5X], MW-3 (280-80491-3)[20X] and MW-10 (280-80491-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 03/14/2016 and analyzed on 04/05/2016.

Sample MW-7 (280-80491-1) was prepared at a reduced aliquot due to sediment.

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

RADIUM-228
Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 03/14/2016 and analyzed on 04/05/2016.

Radium-228 was detected in method blank MB 160-240457/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample MW-7 (280-80491-1) was prepared at a reduced aliquot due to sediment.

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

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-7 (280-80491-1), MW-1 (280-80491-2), MW-3 (280-80491-3), MW-10 (280-80491-4) and MW-1P (280-80491-5) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 04/06/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Client Sample ID: MW-7 — Lab Sample ID: 280-80491-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0014	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0013	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.026		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.000094	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	36		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000077	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00076	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0032		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0081	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0016	B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.46		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.047		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.02	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	51		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.32	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	180		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	740		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	140		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-80491-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0024		0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0024	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.14		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.000076	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	72		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00015	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00068	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0026		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.091		0.010	0.00023	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1 (Continued) — Lab Sample ID: 280-80491-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.00053	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0011	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.36		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.035		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.90	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.4	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	68		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.58		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	270		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	940		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	45		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-80491-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.012		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	520		20	4.8	mg/L	20		6020A	Total Recoverable
Cadmium	0.00011	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00056	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00087	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00012	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00053	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	1.3		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	0.077		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.43	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.6	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.069	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2300		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	3.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-80491-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00097	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.068		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	110		1.0	0.24	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 280-80491-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0085		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0015	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.20		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00025	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Boron	12		2.0	1.1	mg/L	100		6020A	Total Recoverable
Lithium	0.031		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.90	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.7	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	59		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.4		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	570		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1P — Lab Sample ID: 280-80491-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00033	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0028	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.13		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	82		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cobalt	0.00036	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.00089	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.012		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00042	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00076	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.73		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.0051	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.90	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	22.4	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	75		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.86		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	65		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	470		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	14		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-80491-1	MW-7	Ground Water	03/07/16 09:10	03/08/16 08:55
280-80491-2	MW-1	Ground Water	03/07/16 09:55	03/08/16 08:55
280-80491-3	MW-3	Ground Water	03/07/16 12:35	03/08/16 08:55
280-80491-4	MW-10	Ground Water	03/07/16 15:35	03/08/16 08:55
280-80491-5	MW-1P	Ground Water	03/07/16 17:35	03/08/16 08:55

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-7
Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0014**	**J**	0.0020	0.00016	mg/L		03/11/16 10:38	03/18/16 22:49	1
Arsenic	**0.0013**	**J**	0.0050	0.00049	mg/L		03/11/16 10:38	03/18/16 22:49	1
Barium	**0.026**		0.0050	0.0011	mg/L		03/11/16 10:38	03/18/16 22:49	1
Beryllium	**0.000094**	**J**	0.0010	0.000053	mg/L		03/11/16 10:38	03/18/16 22:49	1
Calcium	**36**		1.0	0.24	mg/L		03/11/16 10:38	03/18/16 22:49	1
Cadmium	**0.000077**	**J**	0.0010	0.000061	mg/L		03/11/16 10:38	03/18/16 22:49	1
Cobalt	**0.00076**	**J**	0.0010	0.000021	mg/L		03/11/16 10:38	03/18/16 22:49	1
Chromium	**0.0032**		0.0020	0.00060	mg/L		03/11/16 10:38	03/18/16 22:49	1
Molybdenum	**0.0081**	**J**	0.010	0.00023	mg/L		03/11/16 10:38	03/18/16 22:49	1
Lead	**0.0016**	**B**	0.0010	0.00011	mg/L		03/11/16 10:38	03/18/16 22:49	1
Selenium	**0.011**		0.0050	0.00025	mg/L		03/11/16 10:38	03/18/16 22:49	1
Thallium	ND		0.0010	0.000074	mg/L		03/11/16 10:38	03/18/16 22:49	1
Boron	**0.46**		0.10	0.055	mg/L		03/11/16 10:38	03/19/16 13:33	5
Lithium	**0.047**		0.0080	0.00029	mg/L		03/11/16 10:38	03/18/16 22:49	1

Client Sample ID: MW-1
Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0024**		0.0020	0.00016	mg/L		03/11/16 10:38	03/18/16 22:53	1
Arsenic	**0.0024**	**J**	0.0050	0.00049	mg/L		03/11/16 10:38	03/18/16 22:53	1
Barium	**0.14**		0.0050	0.0011	mg/L		03/11/16 10:38	03/18/16 22:53	1
Beryllium	**0.000076**	**J**	0.0010	0.000053	mg/L		03/11/16 10:38	03/18/16 22:53	1
Calcium	**72**		1.0	0.24	mg/L		03/11/16 10:38	03/18/16 22:53	1
Cadmium	**0.00015**	**J**	0.0010	0.000061	mg/L		03/11/16 10:38	03/18/16 22:53	1
Cobalt	**0.00068**	**J**	0.0010	0.000021	mg/L		03/11/16 10:38	03/18/16 22:53	1
Chromium	**0.0026**		0.0020	0.00060	mg/L		03/11/16 10:38	03/18/16 22:53	1
Molybdenum	**0.091**		0.010	0.00023	mg/L		03/11/16 10:38	03/18/16 22:53	1
Lead	**0.00053**	**J B**	0.0010	0.00011	mg/L		03/11/16 10:38	03/18/16 22:53	1
Selenium	**0.0011**	**J**	0.0050	0.00025	mg/L		03/11/16 10:38	03/18/16 22:53	1
Thallium	ND		0.0010	0.000074	mg/L		03/11/16 10:38	03/18/16 22:53	1
Boron	**0.36**		0.10	0.055	mg/L		03/11/16 10:38	03/19/16 13:37	5
Lithium	**0.035**		0.0080	0.00029	mg/L		03/11/16 10:38	03/18/16 22:53	1

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/11/16 10:38	03/18/16 22:57	1
Arsenic	ND		0.0050	0.00049	mg/L		03/11/16 10:38	03/18/16 22:57	1
Barium	**0.012**		0.0050	0.0011	mg/L		03/11/16 10:38	03/18/16 22:57	1
Beryllium	ND		0.0010	0.000053	mg/L		03/11/16 10:38	03/18/16 22:57	1
Calcium	**520**		20	4.8	mg/L		03/11/16 10:38	03/19/16 13:41	20
Cadmium	**0.00011**	**J**	0.0010	0.000061	mg/L		03/11/16 10:38	03/18/16 22:57	1
Cobalt	**0.00056**	**J**	0.0010	0.000021	mg/L		03/11/16 10:38	03/18/16 22:57	1
Chromium	ND		0.0020	0.00060	mg/L		03/11/16 10:38	03/18/16 22:57	1
Molybdenum	**0.00087**	**J**	0.010	0.00023	mg/L		03/11/16 10:38	03/18/16 22:57	1
Lead	**0.00012**	**J B**	0.0010	0.00011	mg/L		03/11/16 10:38	03/18/16 22:57	1
Selenium	**0.00053**	**J**	0.0050	0.00025	mg/L		03/11/16 10:38	03/18/16 22:57	1
Thallium	ND		0.0010	0.000074	mg/L		03/11/16 10:38	03/18/16 22:57	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.3**		0.40	0.22	mg/L		03/11/16 10:38	03/19/16 13:41	20
Lithium	**0.077**		0.0080	0.00029	mg/L		03/11/16 10:38	03/18/16 22:57	1

Client Sample ID: MW-10
Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/11/16 10:38	03/18/16 23:02	1
Arsenic	**0.00097**	**J**	0.0050	0.00049	mg/L		03/11/16 10:38	03/18/16 23:02	1
Barium	**0.068**		0.0050	0.0011	mg/L		03/11/16 10:38	03/18/16 23:02	1
Beryllium	ND		0.0010	0.000053	mg/L		03/11/16 10:38	03/18/16 23:02	1
Calcium	**110**		1.0	0.24	mg/L		03/11/16 10:38	03/18/16 23:02	1
Cadmium	ND		0.0010	0.000061	mg/L		03/11/16 10:38	03/18/16 23:02	1
Cobalt	**0.0085**		0.0010	0.000021	mg/L		03/11/16 10:38	03/18/16 23:02	1
Chromium	**0.0015**	**J**	0.0020	0.00060	mg/L		03/11/16 10:38	03/18/16 23:02	1
Molybdenum	**0.20**		0.010	0.00023	mg/L		03/11/16 10:38	03/18/16 23:02	1
Lead	**0.00025**	**J B**	0.0010	0.00011	mg/L		03/11/16 10:38	03/18/16 23:02	1
Selenium	ND		0.0050	0.00025	mg/L		03/11/16 10:38	03/18/16 23:02	1
Thallium	ND		0.0010	0.000074	mg/L		03/11/16 10:38	03/18/16 23:02	1
Boron	**12**		2.0	1.1	mg/L		03/11/16 10:38	03/19/16 13:46	100
Lithium	**0.031**		0.0080	0.00029	mg/L		03/11/16 10:38	03/18/16 23:02	1

Client Sample ID: MW-1P
Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00033**	**J**	0.0020	0.00016	mg/L		03/11/16 10:38	03/18/16 23:06	1
Arsenic	**0.0028**	**J**	0.0050	0.00049	mg/L		03/11/16 10:38	03/18/16 23:06	1
Barium	**0.13**		0.0050	0.0011	mg/L		03/11/16 10:38	03/18/16 23:06	1
Beryllium	ND		0.0010	0.000053	mg/L		03/11/16 10:38	03/18/16 23:06	1
Calcium	**82**		1.0	0.24	mg/L		03/11/16 10:38	03/18/16 23:06	1
Cadmium	ND		0.0010	0.000061	mg/L		03/11/16 10:38	03/18/16 23:06	1
Cobalt	**0.00036**	**J**	0.0010	0.000021	mg/L		03/11/16 10:38	03/18/16 23:06	1
Chromium	**0.00089**	**J**	0.0020	0.00060	mg/L		03/11/16 10:38	03/18/16 23:06	1
Molybdenum	**0.012**		0.010	0.00023	mg/L		03/11/16 10:38	03/18/16 23:06	1
Lead	**0.00042**	**J B**	0.0010	0.00011	mg/L		03/11/16 10:38	03/18/16 23:06	1
Selenium	**0.00076**	**J**	0.0050	0.00025	mg/L		03/11/16 10:38	03/18/16 23:06	1
Thallium	ND		0.0010	0.000074	mg/L		03/11/16 10:38	03/18/16 23:06	1
Boron	**0.73**		0.20	0.11	mg/L		03/11/16 10:38	03/19/16 13:50	10
Lithium	**0.0051**	**J**	0.0080	0.00029	mg/L		03/11/16 10:38	03/18/16 23:06	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-7
Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 10:55	03/18/16 15:32	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1
Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 10:55	03/18/16 15:44	1

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 10:55	03/18/16 15:46	1

Client Sample ID: MW-10
Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 10:55	03/18/16 15:49	1

Client Sample ID: MW-1P
Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 10:55	03/18/16 15:51	1

General Chemistry

Client Sample ID: MW-7
Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.02	HF	0.100	0.100	SU			03/08/16 19:38	1
Temperature	22.1	HF	1.00	1.00	Degrees C			03/08/16 19:38	1
Chloride	51		3.0	0.25	mg/L			03/18/16 22:18	1
Fluoride	0.32	J	0.50	0.060	mg/L			03/18/16 22:18	1
Sulfate	180		5.0	0.23	mg/L			03/18/16 22:18	1
Total Dissolved Solids (TDS)	740		10	4.7	mg/L			03/09/16 15:41	1
Total Suspended Solids	140		4.0	1.1	mg/L			03/10/16 17:18	1

Client Sample ID: MW-1
Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.90	HF	0.100	0.100	SU			03/08/16 19:43	1
Temperature	22.4	HF	1.00	1.00	Degrees C			03/08/16 19:43	1
Chloride	68		3.0	0.25	mg/L			03/18/16 22:34	1
Fluoride	0.58		0.50	0.060	mg/L			03/18/16 22:34	1
Sulfate	270		25	1.2	mg/L			03/19/16 20:44	5
Total Dissolved Solids (TDS)	940		10	4.7	mg/L			03/09/16 15:41	1
Total Suspended Solids	45		4.0	1.1	mg/L			03/10/16 17:18	1

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.43	HF	0.100	0.100	SU			03/08/16 19:54	1

General Chemistry (Continued)

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	22.6	HF	1.00	1.00	Degrees C			03/08/16 19:54	1
Chloride	43		3.0	0.25	mg/L			03/18/16 22:51	1
Fluoride	0.069	J	0.50	0.060	mg/L			03/18/16 22:51	1
Sulfate	2300		100	4.6	mg/L			03/19/16 21:01	20
Total Dissolved Solids (TDS)	4000		20	9.4	mg/L			03/09/16 15:41	1
Total Suspended Solids	3.6	J	4.0	1.1	mg/L			03/10/16 17:18	1

Client Sample ID: MW-10
Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.90	HF	0.100	0.100	SU			03/08/16 19:48	1
Temperature	22.7	HF	1.00	1.00	Degrees C			03/08/16 19:48	1
Chloride	59		3.0	0.25	mg/L			03/18/16 23:25	1
Fluoride	3.4		0.50	0.060	mg/L			03/18/16 23:25	1
Sulfate	570		25	1.2	mg/L			03/18/16 23:42	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			03/09/16 15:41	1
Total Suspended Solids	1.2	J	4.0	1.1	mg/L			03/10/16 17:18	1

Client Sample ID: MW-1P
Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.90	HF	0.100	0.100	SU			03/08/16 19:59	1
Temperature	22.4	HF	1.00	1.00	Degrees C			03/08/16 19:59	1
Chloride	75		3.0	0.25	mg/L			03/18/16 23:58	1
Fluoride	0.86		0.50	0.060	mg/L			03/18/16 23:58	1
Sulfate	65		5.0	0.23	mg/L			03/18/16 23:58	1
Total Dissolved Solids (TDS)	470		10	4.7	mg/L			03/09/16 15:41	1
Total Suspended Solids	14		4.0	1.1	mg/L			03/10/16 17:18	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-7
Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.316	U	0.249	0.251	1.00	0.361	pCi/L	03/14/16 17:45	04/05/16 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*40 - 110*	*03/14/16 17:45*	*04/05/16 17:48*	*1*

Client Sample ID: MW-1
Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.537		0.194	0.200	1.00	0.203	pCi/L	03/14/16 17:45	04/05/16 17:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110	03/14/16 17:45	04/05/16 17:49	1

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.473		0.178	0.183	1.00	0.179	pCi/L	03/14/16 17:45	04/05/16 17:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		40 - 110	03/14/16 17:45	04/05/16 17:49	1

Client Sample ID: MW-10
Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.567		0.217	0.223	1.00	0.264	pCi/L	03/14/16 17:45	04/05/16 17:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.9		40 - 110	03/14/16 17:45	04/05/16 17:49	1

Client Sample ID: MW-1P
Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0479	U	0.168	0.168	1.00	0.304	pCi/L	03/14/16 17:45	04/05/16 17:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110	03/14/16 17:45	04/05/16 17:49	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.629	U	0.515	0.519	1.00	0.822	pCi/L	03/14/16 18:09	04/05/16 15:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.4		40 - 110	03/14/16 18:09	04/05/16 15:24	1
Y Carrier	81.9		40 - 110	03/14/16 18:09	04/05/16 15:24	1

Client Sample ID: MW-1
Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.642		0.259	0.265	1.00	0.357	pCi/L	03/14/16 18:09	04/05/16 15:24	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110	03/14/16 18:09	04/05/16 15:24	1
Y Carrier	80.7		40 - 110	03/14/16 18:09	04/05/16 15:24	1

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.863**		0.270	0.282	1.00	0.342	pCi/L	03/14/16 18:09	04/05/16 15:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		40 - 110	03/14/16 18:09	04/05/16 15:24	1
Y Carrier	79.6		40 - 110	03/14/16 18:09	04/05/16 15:24	1

Client Sample ID: MW-10
Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.141	U	0.179	0.180	1.00	0.297	pCi/L	03/14/16 18:09	04/05/16 15:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.9		40 - 110	03/14/16 18:09	04/05/16 15:24	1
Y Carrier	85.6		40 - 110	03/14/16 18:09	04/05/16 15:24	1

Client Sample ID: MW-1P
Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.138	U	0.224	0.225	1.00	0.379	pCi/L	03/14/16 18:09	04/05/16 15:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110	03/14/16 18:09	04/05/16 15:24	1
Y Carrier	81.5		40 - 110	03/14/16 18:09	04/05/16 15:24	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-7
Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.944**		0.572	0.576	5.00	0.822	pCi/L		04/06/16 22:11	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1
Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.18		0.323	0.332	5.00	0.357	pCi/L		04/06/16 22:11	1

Client Sample ID: MW-3
Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.34		0.324	0.336	5.00	0.342	pCi/L		04/06/16 22:11	1

Client Sample ID: MW-10
Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.708		0.281	0.286	5.00	0.297	pCi/L		04/06/16 22:11	1

Client Sample ID: MW-1P
Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.186	U	0.281	0.281	5.00	0.379	pCi/L		04/06/16 22:11	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-221151/1-A
Matrix: Water
Analysis Batch: 222294

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221151

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/11/16 10:38	03/18/16 21:38	1
Arsenic	ND		0.0050	0.00049	mg/L		03/11/16 10:38	03/18/16 21:38	1
Barium	ND		0.0050	0.0011	mg/L		03/11/16 10:38	03/18/16 21:38	1
Beryllium	ND		0.0010	0.000053	mg/L		03/11/16 10:38	03/18/16 21:38	1
Calcium	ND		1.0	0.24	mg/L		03/11/16 10:38	03/18/16 21:38	1
Cadmium	ND		0.0010	0.000061	mg/L		03/11/16 10:38	03/18/16 21:38	1
Cobalt	ND		0.0010	0.000021	mg/L		03/11/16 10:38	03/18/16 21:38	1
Chromium	ND		0.0020	0.00060	mg/L		03/11/16 10:38	03/18/16 21:38	1
Molybdenum	ND		0.010	0.00023	mg/L		03/11/16 10:38	03/18/16 21:38	1
Lead	0.000315	J	0.0010	0.00011	mg/L		03/11/16 10:38	03/18/16 21:38	1
Selenium	ND		0.0050	0.00025	mg/L		03/11/16 10:38	03/18/16 21:38	1
Thallium	ND		0.0010	0.000074	mg/L		03/11/16 10:38	03/18/16 21:38	1
Lithium	ND		0.0080	0.00029	mg/L		03/11/16 10:38	03/18/16 21:38	1

Lab Sample ID: MB 240-221151/1-A
Matrix: Water
Analysis Batch: 222405

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221151

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020	0.011	mg/L		03/11/16 10:38	03/19/16 13:21	1

Lab Sample ID: LCS 240-221151/2-A
Matrix: Water
Analysis Batch: 222294

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0885		mg/L		89	80 - 120
Arsenic	1.00	0.929		mg/L		93	80 - 120
Barium	1.00	0.861		mg/L		86	80 - 120
Beryllium	1.00	0.884		mg/L		88	80 - 120
Calcium	10.0	9.71		mg/L		97	80 - 120
Cadmium	1.00	0.898		mg/L		90	80 - 120
Cobalt	1.00	0.951		mg/L		95	80 - 120
Chromium	1.00	0.941		mg/L		94	80 - 120
Molybdenum	0.100	0.0919		mg/L		92	80 - 120
Lead	1.00	0.969		mg/L		97	80 - 120
Selenium	1.00	0.915		mg/L		92	80 - 120
Thallium	0.250	0.246		mg/L		98	80 - 120
Lithium	0.100	0.0921		mg/L		92	80 - 120

Lab Sample ID: LCS 240-221151/2-A
Matrix: Water
Analysis Batch: 222405

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.0888		mg/L		89	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-317356/1-A
Matrix: Water
Analysis Batch: 317512

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317356

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 10:55	03/18/16 15:28	1

Lab Sample ID: LCS 280-317356/2-A
Matrix: Water
Analysis Batch: 317512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317356

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.06		ug/L		101	84 - 120

Lab Sample ID: 280-80491-1 MS
Matrix: Ground Water
Analysis Batch: 317512

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 317356

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		5.00	5.18		ug/L		104	75 - 125

Lab Sample ID: 280-80491-1 MSD
Matrix: Ground Water
Analysis Batch: 317512

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 317356

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		5.00	5.12		ug/L		102	75 - 125	1	20

Method: 9040B - pH

Lab Sample ID: LCS 280-316344/4
Matrix: Water
Analysis Batch: 316344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	6.970		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-317374/13
Matrix: Water
Analysis Batch: 317374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			03/18/16 11:01	1
Fluoride	ND		0.50	0.060	mg/L			03/18/16 11:01	1
Sulfate	ND		5.0	0.23	mg/L			03/18/16 11:01	1

Lab Sample ID: LCS 280-317374/11
Matrix: Water
Analysis Batch: 317374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.8		mg/L		98	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-317374/11
Matrix: Water
Analysis Batch: 317374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.00	5.08		mg/L		102	90 - 110
Sulfate	100	98.0		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-317374/12
Matrix: Water
Analysis Batch: 317374

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.0		mg/L		98	90 - 110	0	10
Fluoride	5.00	5.08		mg/L		102	90 - 110	0	10
Sulfate	100	98.2		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-317374/10
Matrix: Water
Analysis Batch: 317374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.46	J	mg/L		98	50 - 150
Fluoride	0.200	0.183	J	mg/L		92	50 - 150
Sulfate	2.50	2.48	J	mg/L		99	50 - 150

Lab Sample ID: MB 280-317496/6
Matrix: Water
Analysis Batch: 317496

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			03/19/16 11:13	1
Fluoride	ND		0.50	0.060	mg/L			03/19/16 11:13	1
Sulfate	ND		5.0	0.23	mg/L			03/19/16 11:13	1

Lab Sample ID: LCS 280-317496/4
Matrix: Water
Analysis Batch: 317496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	98.0		mg/L		98	90 - 110
Fluoride	5.00	5.09		mg/L		102	90 - 110
Sulfate	100	97.9		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-317496/5
Matrix: Water
Analysis Batch: 317496

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.2		mg/L		98	90 - 110	0	10
Fluoride	5.00	5.10		mg/L		102	90 - 110	0	10
Sulfate	100	98.2		mg/L		98	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-317496/3
Matrix: Water
Analysis Batch: 317496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.45	J	mg/L		98	50 - 150
Fluoride	0.200	0.176	J	mg/L		88	50 - 150
Sulfate	2.50	2.47	J	mg/L		99	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-316358/1
Matrix: Water
Analysis Batch: 316358

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			03/09/16 15:41	1

Lab Sample ID: LCS 280-316358/2
Matrix: Water
Analysis Batch: 316358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	488		mg/L		98	86 - 110

Lab Sample ID: LCSD 280-316358/3
Matrix: Water
Analysis Batch: 316358

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	500	491		mg/L		98	86 - 110	1	20

Lab Sample ID: 280-80491-3 DU
Matrix: Ground Water
Analysis Batch: 316358

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	4000		3960		mg/L		0.1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-316501/2
Matrix: Water
Analysis Batch: 316501

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			03/10/16 17:18	1

Lab Sample ID: LCS 280-316501/1
Matrix: Water
Analysis Batch: 316501

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	90.8		mg/L		91	86 - 114

Lab Sample ID: 280-80491-5 DU
Matrix: Ground Water
Analysis Batch: 316501

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	14		15.2		mg/L		5	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-240455/1-A
Matrix: Water
Analysis Batch: 244234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240455

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03587	U	0.0991	0.0991	1.00	0.216	pCi/L	03/14/16 17:45	04/05/16 17:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*03/14/16 17:45*	*04/05/16 17:47*	*1*

Lab Sample ID: LCS 160-240455/2-A
Matrix: Water
Analysis Batch: 244234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240455

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	13.91		1.51	1.00	0.231	pCi/L	125	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-240457/1-A
Matrix: Water
Analysis Batch: 244235

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240457

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5505		0.279	0.284	1.00	0.414	pCi/L	03/14/16 18:09	04/05/16 15:22	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*03/14/16 18:09*	*04/05/16 15:22*	*1*
Y Carrier	*80.7*		*40 - 110*	*03/14/16 18:09*	*04/05/16 15:22*	*1*

Lab Sample ID: LCS 160-240457/2-A
Matrix: Water
Analysis Batch: 244235

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240457

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	15.4	19.93		2.07	1.00	0.403	pCi/L	130	56 - 140

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-240457/2-A
Matrix: Water
Analysis Batch: 244235

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240457

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.3		40 - 110
Y Carrier	77.8		40 - 110

Metals

Prep Batch: 221151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total Recoverable	Ground Water	3005A	
280-80491-2	MW-1	Total Recoverable	Ground Water	3005A	
280-80491-3	MW-3	Total Recoverable	Ground Water	3005A	
280-80491-4	MW-10	Total Recoverable	Ground Water	3005A	
280-80491-5	MW-1P	Total Recoverable	Ground Water	3005A	
LCS 240-221151/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-221151/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 222294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total Recoverable	Ground Water	6020A	221151
280-80491-2	MW-1	Total Recoverable	Ground Water	6020A	221151
280-80491-3	MW-3	Total Recoverable	Ground Water	6020A	221151
280-80491-4	MW-10	Total Recoverable	Ground Water	6020A	221151
280-80491-5	MW-1P	Total Recoverable	Ground Water	6020A	221151
LCS 240-221151/2-A	Lab Control Sample	Total Recoverable	Water	6020A	221151
MB 240-221151/1-A	Method Blank	Total Recoverable	Water	6020A	221151

Analysis Batch: 222405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total Recoverable	Ground Water	6020A	221151
280-80491-2	MW-1	Total Recoverable	Ground Water	6020A	221151
280-80491-3	MW-3	Total Recoverable	Ground Water	6020A	221151
280-80491-4	MW-10	Total Recoverable	Ground Water	6020A	221151
280-80491-5	MW-1P	Total Recoverable	Ground Water	6020A	221151
LCS 240-221151/2-A	Lab Control Sample	Total Recoverable	Water	6020A	221151
MB 240-221151/1-A	Method Blank	Total Recoverable	Water	6020A	221151

Prep Batch: 317356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	7470A	
280-80491-1 MS	MW-7	Total/NA	Ground Water	7470A	
280-80491-1 MSD	MW-7	Total/NA	Ground Water	7470A	
280-80491-2	MW-1	Total/NA	Ground Water	7470A	
280-80491-3	MW-3	Total/NA	Ground Water	7470A	
280-80491-4	MW-10	Total/NA	Ground Water	7470A	
280-80491-5	MW-1P	Total/NA	Ground Water	7470A	
LCS 280-317356/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-317356/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 317512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	7470A	317356
280-80491-1 MS	MW-7	Total/NA	Ground Water	7470A	317356
280-80491-1 MSD	MW-7	Total/NA	Ground Water	7470A	317356
280-80491-2	MW-1	Total/NA	Ground Water	7470A	317356
280-80491-3	MW-3	Total/NA	Ground Water	7470A	317356
280-80491-4	MW-10	Total/NA	Ground Water	7470A	317356
280-80491-5	MW-1P	Total/NA	Ground Water	7470A	317356
LCS 280-317356/2-A	Lab Control Sample	Total/NA	Water	7470A	317356
MB 280-317356/1-A	Method Blank	Total/NA	Water	7470A	317356

General Chemistry

Analysis Batch: 316344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	9040B	
280-80491-2	MW-1	Total/NA	Ground Water	9040B	
280-80491-3	MW-3	Total/NA	Ground Water	9040B	
280-80491-4	MW-10	Total/NA	Ground Water	9040B	
280-80491-5	MW-1P	Total/NA	Ground Water	9040B	
LCS 280-316344/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 316358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	SM 2540C	
280-80491-2	MW-1	Total/NA	Ground Water	SM 2540C	
280-80491-3	MW-3	Total/NA	Ground Water	SM 2540C	
280-80491-3 DU	MW-3	Total/NA	Ground Water	SM 2540C	
280-80491-4	MW-10	Total/NA	Ground Water	SM 2540C	
280-80491-5	MW-1P	Total/NA	Ground Water	SM 2540C	
LCS 280-316358/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-316358/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-316358/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 316501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	SM 2540D	
280-80491-2	MW-1	Total/NA	Ground Water	SM 2540D	
280-80491-3	MW-3	Total/NA	Ground Water	SM 2540D	
280-80491-4	MW-10	Total/NA	Ground Water	SM 2540D	
280-80491-5	MW-1P	Total/NA	Ground Water	SM 2540D	
280-80491-5 DU	MW-1P	Total/NA	Ground Water	SM 2540D	
LCS 280-316501/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-316501/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 317374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	9056A	
280-80491-2	MW-1	Total/NA	Ground Water	9056A	
280-80491-3	MW-3	Total/NA	Ground Water	9056A	
280-80491-4	MW-10	Total/NA	Ground Water	9056A	
280-80491-4	MW-10	Total/NA	Ground Water	9056A	
280-80491-5	MW-1P	Total/NA	Ground Water	9056A	
LCS 280-317374/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-317374/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-317374/13	Method Blank	Total/NA	Water	9056A	
MRL 280-317374/10	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 317496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-2	MW-1	Total/NA	Ground Water	9056A	
280-80491-3	MW-3	Total/NA	Ground Water	9056A	
LCS 280-317496/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-317496/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-317496/6	Method Blank	Total/NA	Water	9056A	
MRL 280-317496/3	Lab Control Sample	Total/NA	Water	9056A	

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Rad

Prep Batch: 240455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	PrecSep-21	
280-80491-2	MW-1	Total/NA	Ground Water	PrecSep-21	
280-80491-3	MW-3	Total/NA	Ground Water	PrecSep-21	
280-80491-4	MW-10	Total/NA	Ground Water	PrecSep-21	
280-80491-5	MW-1P	Total/NA	Ground Water	PrecSep-21	
LCS 160-240455/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-240455/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 240457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80491-1	MW-7	Total/NA	Ground Water	PrecSep_0	
280-80491-2	MW-1	Total/NA	Ground Water	PrecSep_0	
280-80491-3	MW-3	Total/NA	Ground Water	PrecSep_0	
280-80491-4	MW-10	Total/NA	Ground Water	PrecSep_0	
280-80491-5	MW-1P	Total/NA	Ground Water	PrecSep_0	
LCS 160-240457/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-240457/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Client Sample ID: MW-7

Date Collected: 03/07/16 09:10
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	222294	03/18/16 22:49	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	222405	03/19/16 13:33	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317356	03/18/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317512	03/18/16 15:32	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 19:38	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	317374	03/18/16 22:18	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316358	03/09/16 15:41	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316501	03/10/16 17:18	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			500.64 mL	1.0 g	240455	03/14/16 17:45	CMC	TAL SL
Total/NA	Analysis	9315		1	500.64 mL		244234	04/05/16 17:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.64 mL	1.0 g	240457	03/14/16 18:09	CMC	TAL SL
Total/NA	Analysis	9320		1	500.64 mL		244235	04/05/16 15:24	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244673	04/06/16 22:11	RTM	TAL SL

Client Sample ID: MW-1

Date Collected: 03/07/16 09:55
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	222294	03/18/16 22:53	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	222405	03/19/16 13:37	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317356	03/18/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317512	03/18/16 15:44	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 19:43	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	317374	03/18/16 22:34	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	317496	03/19/16 20:44	CML	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316358	03/09/16 15:41	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316501	03/10/16 17:18	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.89 mL	1.0 g	240455	03/14/16 17:45	CMC	TAL SL
Total/NA	Analysis	9315		1	1000.89 mL		244234	04/05/16 17:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.89 mL	1.0 g	240457	03/14/16 18:09	CMC	TAL SL
Total/NA	Analysis	9320		1	1000.89 mL		244235	04/05/16 15:24	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244673	04/06/16 22:11	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Client Sample ID: MW-3

Date Collected: 03/07/16 12:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	222294	03/18/16 22:57	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	222405	03/19/16 13:41	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317356	03/18/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317512	03/18/16 15:46	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 19:54	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	317374	03/18/16 22:51	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	317496	03/19/16 21:01	CML	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	316358	03/09/16 15:41	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316501	03/10/16 17:18	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.82 mL	1.0 g	240455	03/14/16 17:45	CMC	TAL SL
Total/NA	Analysis	9315		1	999.82 mL		244234	04/05/16 17:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.82 mL	1.0 g	240457	03/14/16 18:09	CMC	TAL SL
Total/NA	Analysis	9320		1	999.82 mL		244235	04/05/16 15:24	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244673	04/06/16 22:11	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 03/07/16 15:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	222294	03/18/16 23:02	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		100	50 mL	50 mL	222405	03/19/16 13:46	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317356	03/18/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317512	03/18/16 15:49	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 19:48	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	317374	03/18/16 23:25	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	317374	03/18/16 23:42	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316358	03/09/16 15:41	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316501	03/10/16 17:18	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.66 mL	1.0 g	240455	03/14/16 17:45	CMC	TAL SL
Total/NA	Analysis	9315		1	1000.66 mL		244234	04/05/16 17:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.66 mL	1.0 g	240457	03/14/16 18:09	CMC	TAL SL
Total/NA	Analysis	9320		1	1000.66 mL		244235	04/05/16 15:24	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244673	04/06/16 22:11	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Client Sample ID: MW-1P

Date Collected: 03/07/16 17:35
Date Received: 03/08/16 08:55

Lab Sample ID: 280-80491-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	222294	03/18/16 23:06	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221151	03/11/16 10:38	WKD	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	222405	03/19/16 13:50	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317356	03/18/16 10:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	317512	03/18/16 15:51	CDH	TAL DEN
Total/NA	Analysis	9040B		1			316344	03/08/16 19:59	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	317374	03/18/16 23:58	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316358	03/09/16 15:41	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	316501	03/10/16 17:18	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.77 mL	1.0 g	240455	03/14/16 17:45	CMC	TAL SL
Total/NA	Analysis	9315		1	999.77 mL		244234	04/05/16 17:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.77 mL	1.0 g	240457	03/14/16 18:09	CMC	TAL SL
Total/NA	Analysis	9320		1	999.77 mL		244235	04/05/16 15:24	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			244673	04/06/16 22:11	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Ground Water	Mercury
9040B		Ground Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-16 *
Illinois	NELAP	5	200004	07-31-16 *
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16 *
New Jersey	NELAP	2	OH001	06-30-16 *
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: (518) 331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)		Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids		9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		N	N	D			
Field Duplicate (FB) MW-7	3/7/16	0910	G	Water	N	N	1	2	1	1	1	2		7	
Equipment Blank (EB) MW-1	3/7/16	0955	G	Water	N	N	1	2	1	1	1	2		7	
MW-3	3/7/16	1235	G	Water	N	N	1	2	1	1	1	2		7	
MW-10	3/7/16	1535	G	Water	N	N	1	2	1	1	1	2		7	
MW-1P	3/7/16	1735	G	Water	N	N	1	2	1	1	1	2		7	

3/8/16

280-80491 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by: Justin Bills HDR	Date/Time: 3/8/16 0855	Company	Received by: Manaaji to	Date/Time: 3/8/16 855	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3, 4.8-0.2 IR#7 Transferred by DW 3/8/16

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-342212.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-80491-1

Address: 13715 Rider Trail North,	Due Date Requested: 4/1/2016
City: Earth City	TAT Requested (days):
State, Zip: MO, 63045	PO #:
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:
Email:	Project #: 28014379
Project Name: Xcel Energy GW CCR Monitoring - Valmont	SSOW#:
Site: Xcel Energy CCR - Valmont Station	

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-7 (280-80491-1)	3/7/16	09:10 Mountain		Water			X	X	2	
MW-1 (280-80491-2)	3/7/16	09:55 Mountain		Water			X	X	2	
MW-3 (280-80491-3)	3/7/16	12:35 Mountain		Water			X	X	2	
MW-10 (280-80491-4)	3/7/16	15:35 Mountain		Water			X	X	2	
MW-1P (280-80491-5)	3/7/16	17:35 Mountain		Water			X	X	2	

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/9/16 1545	~~TA~~ DEN	[signature]	3.10.16 0830	TASR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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4/7/2016

0,8/C03

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-342211.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 280-80491-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 3/30/2016			Preservation Codes:
City: North Canton	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	542	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-7 (280-80491-1)	3/7/16	09:10 Mountain		Water			X		1	Use Collision Cell 1x502
MW-1 (280-80491-2)	3/7/16	09:55 Mountain		Water			X		1	Use Collision Cell
MW-3 (280-80491-3)	3/7/16	12:35 Mountain		Water			X		1	Use Collision Cell
MW-10 (280-80491-4)	3/7/16	15:35 Mountain		Water			X		1	Use Collision Cell
MW-1P (280-80491-5)	3/7/16	17:35 Mountain		Water			X		1	Use Collision Cell

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	3/9/16 1545	TA Den	[signature]	3-10-16 11:30am	TA Canton
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Canton Sample Receipt Form/Narrative Login # : 280-80491
Canton Facility

Client TA Denver Site Name _____ Cooler unpacked by: Jenny Stiller

Cooler Received on 3-10-16 Opened on 3-10-16

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box (Client Cooler) Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN# 48 (CF **-1.9** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

IR GUN# 36 (CF **-1.5** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

IR GUN# I8 (CF **-0.5** °C) Observed Cooler Temp. 0.8 °C Corrected Cooler Temp. 0.3 °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 (Yes) No
   -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes (No)
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Are these work share samples? (Yes) No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC559158**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____.

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-80491-1

Login Number: 80491
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-80491-1

Login Number: 80491
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 03/10/16 09:25 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.2
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80491-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-80491-1	MW-7	97.4
280-80491-2	MW-1	93.2
280-80491-3	MW-3	94.3
280-80491-4	MW-10	98.9
280-80491-5	MW-1P	90.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
LCS 160-240455/2-A	Lab Control Sample	98.3
MB 160-240455/1-A	Method Blank	90.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-80491-1	MW-7	97.4	81.9
280-80491-2	MW-1	93.2	80.7
280-80491-3	MW-3	94.3	79.6
280-80491-4	MW-10	98.9	85.6
280-80491-5	MW-1P	90.9	81.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
LCS 160-240457/2-A	Lab Control Sample	98.3	77.8
MB 160-240457/1-A	Method Blank	90.9	80.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-80613-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
4/11/2016 3:36:25 PM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-80613-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-80613-1

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.

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.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

RECEIPT

The samples were received on 3/11/2016 at 11:06 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 12.8º C.

The cooler arrived above the recommended 6.0C. Samples were taken and brought directly to laboratory, where they were immediately chilled.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/17/2016 and analyzed on 03/26/2016 and 03/28/2016.

Barium, Beryllium and Calcium were detected in method blank MB 240-221986/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample MW-4 (280-80613-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 03/18/2016 and analyzed on 03/24/2016.

Mercury failed the recovery criteria low for the MS and MSD of sample 280-80610-1 in batch 280-318118. Refer to the QC report for details.

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

TOTAL DISSOLVED SOLIDS

Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 03/11/2016 and 03/12/2016.

Job ID: 280-80613-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

TOTAL SUSPENDED SOLIDS
Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 03/16/2016.

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

CORROSIVITY (PH)
Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 03/26/2016.

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

ANIONS (28 DAYS)
Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 03/28/2016 and 03/29/2016.

Samples MW-4 (280-80613-1)[2X] and MW-4 (280-80613-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 03/16/2016 and analyzed on 04/07/2016.

Sample MW-4 (280-80613-1) contained high levels of sediment and was prepared at a reduced volume.

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

RADIUM-228
Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 03/17/2016 and analyzed on 04/06/2016.

Sample MW-4 (280-80613-1) contained high levels of sediment and was prepared at a reduced volume.

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

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-4 (280-80613-1) and MW-4EB (280-80613-2) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 04/11/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Client Sample ID: MW-4 — Lab Sample ID: 280-80613-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00018	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.013		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.026	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00025	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	400	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000074	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0025		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0040		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.018		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0013		0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.24		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.95		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.21		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.77	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.8	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	550		150	13	mg/L	50		9056A	Total/NA
Fluoride	3.4		1.0	0.12	mg/L	2		9056A	Total/NA
Sulfate	5800		250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9300		100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	48		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4EB — Lab Sample ID: 280-80613-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Beryllium	0.00019	J B	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Lithium	0.00031	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	6.50	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.7	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Total Dissolved Solids (TDS)	8.0	J	10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-80613-1	MW-4	Ground Water	03/10/16 09:30	03/11/16 11:06
280-80613-2	MW-4EB	Water	03/10/16 10:00	03/11/16 11:06

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-4
Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00018**	**J**	0.0020	0.00016	mg/L		03/17/16 10:39	03/26/16 02:48	1
Arsenic	**0.013**		0.0050	0.00049	mg/L		03/17/16 10:39	03/26/16 02:48	1
Barium	**0.026**	**B**	0.0050	0.0011	mg/L		03/17/16 10:39	03/26/16 02:48	1
Beryllium	**0.00025**	**J B**	0.0010	0.000053	mg/L		03/17/16 10:39	03/26/16 02:48	1
Calcium	**400**	**B**	1.0	0.24	mg/L		03/17/16 10:39	03/26/16 02:48	1
Cadmium	**0.000074**	**J**	0.0010	0.000061	mg/L		03/17/16 10:39	03/26/16 02:48	1
Cobalt	**0.0025**		0.0010	0.000021	mg/L		03/17/16 10:39	03/26/16 02:48	1
Chromium	**0.0040**		0.0020	0.00060	mg/L		03/17/16 10:39	03/26/16 02:48	1
Molybdenum	**0.018**		0.010	0.00023	mg/L		03/17/16 10:39	03/26/16 02:48	1
Lead	**0.0013**		0.0010	0.00011	mg/L		03/17/16 10:39	03/26/16 02:48	1
Selenium	**0.24**		0.0050	0.00025	mg/L		03/17/16 10:39	03/26/16 02:48	1
Thallium	ND		0.0010	0.000074	mg/L		03/17/16 10:39	03/26/16 02:48	1
Boron	**0.95**		0.20	0.11	mg/L		03/17/16 10:39	03/28/16 20:48	10
Lithium	**0.21**		0.0080	0.00029	mg/L		03/17/16 10:39	03/26/16 02:48	1

Client Sample ID: MW-4EB
Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/17/16 10:39	03/26/16 02:52	1
Arsenic	ND		0.0050	0.00049	mg/L		03/17/16 10:39	03/26/16 02:52	1
Barium	ND		0.0050	0.0011	mg/L		03/17/16 10:39	03/26/16 02:52	1
Beryllium	**0.00019**	**J B**	0.0010	0.000053	mg/L		03/17/16 10:39	03/26/16 02:52	1
Calcium	ND		1.0	0.24	mg/L		03/17/16 10:39	03/26/16 02:52	1
Cadmium	ND		0.0010	0.000061	mg/L		03/17/16 10:39	03/26/16 02:52	1
Cobalt	ND		0.0010	0.000021	mg/L		03/17/16 10:39	03/26/16 02:52	1
Chromium	ND		0.0020	0.00060	mg/L		03/17/16 10:39	03/26/16 02:52	1
Molybdenum	ND		0.010	0.00023	mg/L		03/17/16 10:39	03/26/16 02:52	1
Lead	ND		0.0010	0.00011	mg/L		03/17/16 10:39	03/26/16 02:52	1
Selenium	ND		0.0050	0.00025	mg/L		03/17/16 10:39	03/26/16 02:52	1
Thallium	ND		0.0010	0.000074	mg/L		03/17/16 10:39	03/26/16 02:52	1
Boron	ND		0.020	0.011	mg/L		03/17/16 10:39	03/28/16 20:52	1
Lithium	**0.00031**	**J**	0.0080	0.00029	mg/L		03/17/16 10:39	03/26/16 02:52	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-4
Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 08:31	03/24/16 17:15	1

Client Sample ID: MW-4EB
Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 08:31	03/24/16 17:18	1

General Chemistry

Client Sample ID: MW-4
Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.77**	**HF**	0.100	0.100	SU			03/26/16 09:16	1
Temperature	**20.8**	**HF**	1.00	1.00	Degrees C			03/26/16 09:16	1
Chloride	**550**		150	13	mg/L			03/29/16 00:07	50
Fluoride	**3.4**		1.0	0.12	mg/L			03/28/16 23:49	2
Sulfate	**5800**		250	12	mg/L			03/29/16 00:07	50
Total Dissolved Solids (TDS)	**9300**		100	47	mg/L			03/12/16 14:49	1
Total Suspended Solids	**48**		4.0	1.1	mg/L			03/16/16 18:23	1

Client Sample ID: MW-4EB
Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**6.50**	**HF**	0.100	0.100	SU			03/26/16 09:26	1
Temperature	**20.7**	**HF**	1.00	1.00	Degrees C			03/26/16 09:26	1
Chloride	ND		3.0	0.25	mg/L			03/29/16 01:00	1
Fluoride	ND		0.50	0.060	mg/L			03/29/16 01:00	1
Sulfate	ND		5.0	0.23	mg/L			03/29/16 01:00	1
Total Dissolved Solids (TDS)	**8.0**	**J**	10	4.7	mg/L			03/11/16 15:21	1
Total Suspended Solids	**2.0**	**J**	4.0	1.1	mg/L			03/16/16 18:23	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-4
Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.361**		0.220	0.223	1.00	0.304	pCi/L	03/16/16 17:03	04/07/16 06:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*110*		*40 - 110*	*03/16/16 17:03*	*04/07/16 06:50*	*1*

Client Sample ID: MW-4EB
Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0109	U	0.0846	0.0846	1.00	0.170	pCi/L	03/16/16 17:03	04/07/16 06:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*03/16/16 17:03*	*04/07/16 06:50*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-4
Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.408	U	0.406	0.408	1.00	0.659	pCi/L	03/17/16 10:10	04/06/16 11:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*110*		*40 - 110*	*03/17/16 10:10*	*04/06/16 11:37*	*1*
Y Carrier	*78.5*		*40 - 110*	*03/17/16 10:10*	*04/06/16 11:37*	*1*

Client Sample ID: MW-4EB
Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.000	U	0.227	0.227	1.00	0.402	pCi/L	03/17/16 10:10	04/06/16 11:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*03/17/16 10:10*	*04/06/16 11:38*	*1*
Y Carrier	*86.9*		*40 - 110*	*03/17/16 10:10*	*04/06/16 11:38*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-4
Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.769**		0.462	0.465	5.00	0.659	pCi/L		04/11/16 13:05	1

Client Sample ID: MW-4EB
Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0109	U	0.242	0.242	5.00	0.402	pCi/L		04/11/16 13:05	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-221986/1-A
Matrix: Water
Analysis Batch: 223425

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221986

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		03/17/16 10:39	03/26/16 01:50	1
Arsenic	ND		0.0050	0.00049	mg/L		03/17/16 10:39	03/26/16 01:50	1
Barium	0.00143	J	0.0050	0.0011	mg/L		03/17/16 10:39	03/26/16 01:50	1
Beryllium	0.0000580	J	0.0010	0.000053	mg/L		03/17/16 10:39	03/26/16 01:50	1
Calcium	0.381	J	1.0	0.24	mg/L		03/17/16 10:39	03/26/16 01:50	1
Cadmium	ND		0.0010	0.000061	mg/L		03/17/16 10:39	03/26/16 01:50	1
Cobalt	ND		0.0010	0.000021	mg/L		03/17/16 10:39	03/26/16 01:50	1
Chromium	ND		0.0020	0.00060	mg/L		03/17/16 10:39	03/26/16 01:50	1
Molybdenum	ND		0.010	0.00023	mg/L		03/17/16 10:39	03/26/16 01:50	1
Lead	ND		0.0010	0.00011	mg/L		03/17/16 10:39	03/26/16 01:50	1
Selenium	ND		0.0050	0.00025	mg/L		03/17/16 10:39	03/26/16 01:50	1
Thallium	ND		0.0010	0.000074	mg/L		03/17/16 10:39	03/26/16 01:50	1
Lithium	ND		0.0080	0.00029	mg/L		03/17/16 10:39	03/26/16 01:50	1

Lab Sample ID: MB 240-221986/1-A
Matrix: Water
Analysis Batch: 223620

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221986

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020	0.011	mg/L		03/17/16 10:39	03/28/16 20:40	1

Lab Sample ID: LCS 240-221986/2-A
Matrix: Water
Analysis Batch: 223425

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221986

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0954		mg/L		95	80 - 120
Arsenic	1.00	0.976		mg/L		98	80 - 120
Barium	1.00	0.934		mg/L		93	80 - 120
Beryllium	1.00	1.04		mg/L		104	80 - 120
Calcium	10.0	9.97		mg/L		100	80 - 120
Cadmium	1.00	0.970		mg/L		97	80 - 120
Cobalt	1.00	0.939		mg/L		94	80 - 120
Chromium	1.00	0.927		mg/L		93	80 - 120
Molybdenum	0.100	0.0954		mg/L		95	80 - 120
Lead	1.00	0.922		mg/L		92	80 - 120
Selenium	1.00	0.938		mg/L		94	80 - 120
Thallium	0.250	0.232		mg/L		93	80 - 120
Lithium	0.100	0.104		mg/L		104	80 - 120

Lab Sample ID: LCS 240-221986/2-A
Matrix: Water
Analysis Batch: 223620

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221986

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.0979		mg/L		98	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-317361/1-A
Matrix: Water
Analysis Batch: 318118

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		03/18/16 08:31	03/24/16 16:29	1

Lab Sample ID: LCS 280-317361/2-A
Matrix: Water
Analysis Batch: 318118

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.98		ug/L		100	84 - 120

Lab Sample ID: LCSD 280-317361/3-A
Matrix: Water
Analysis Batch: 318118

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 317361

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	5.00	5.05		ug/L		101	84 - 120	1	15

Method: 9040B - pH

Lab Sample ID: LCS 280-318608/4
Matrix: Water
Analysis Batch: 318608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.020		SU		100	99 - 101

Lab Sample ID: 280-80613-1 DU
Matrix: Ground Water
Analysis Batch: 318608

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.77	HF	7.800		SU		0.4	5
Temperature	20.8	HF	20.70		Degrees C		0.4	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-318384/6
Matrix: Water
Analysis Batch: 318384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			03/28/16 13:18	1
Fluoride	ND		0.50	0.060	mg/L			03/28/16 13:18	1
Sulfate	ND		5.0	0.23	mg/L			03/28/16 13:18	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-318384/4
Matrix: Water
Analysis Batch: 318384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.7		mg/L		100	90 - 110
Fluoride	5.00	5.10		mg/L		102	90 - 110
Sulfate	100	99.4		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-318384/5
Matrix: Water
Analysis Batch: 318384

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.6		mg/L		100	90 - 110	0	10
Fluoride	5.00	5.11		mg/L		102	90 - 110	0	10
Sulfate	100	99.5		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-318384/3
Matrix: Water
Analysis Batch: 318384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	1.91	J	mg/L		76	50 - 150
Fluoride	0.200	0.165	J	mg/L		82	50 - 150
Sulfate	2.50	1.89	J	mg/L		76	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-316636/1
Matrix: Water
Analysis Batch: 316636

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			03/11/16 15:21	1

Lab Sample ID: LCS 280-316636/2
Matrix: Water
Analysis Batch: 316636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	493		mg/L		98	86 - 110

Lab Sample ID: LCSD 280-316636/3
Matrix: Water
Analysis Batch: 316636

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	491		mg/L		98	86 - 110	0	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 280-316686/1
Matrix: Water
Analysis Batch: 316686

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			03/12/16 14:49	1

Lab Sample ID: LCS 280-316686/2
Matrix: Water
Analysis Batch: 316686

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	495		mg/L		99	86 - 110

Lab Sample ID: LCSD 280-316686/3
Matrix: Water
Analysis Batch: 316686

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	492		mg/L		98	86 - 110	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-317133/2
Matrix: Water
Analysis Batch: 317133

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			03/16/16 18:23	1

Lab Sample ID: LCS 280-317133/1
Matrix: Water
Analysis Batch: 317133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	92.8		mg/L		93	86 - 114

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-240836/1-A
Matrix: Water
Analysis Batch: 244697

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240836

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.05990	U	0.0583	0.0586	1.00	0.149	pCi/L	03/16/16 17:03	04/07/16 06:50	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*03/16/16 17:03*	*04/07/16 06:50*	*1*

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-240836/2-A
Matrix: Water
Analysis Batch: 244697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240836

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.67		1.41	1.00	0.163	pCi/L	122	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*109*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-240870/1-A
Matrix: Water
Analysis Batch: 244606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 240870

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2860	U	0.220	0.222	1.00	0.347	pCi/L	03/17/16 10:10	04/06/16 11:37	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*03/17/16 10:10*	*04/06/16 11:37*	*1*
Y Carrier	*81.1*		*40 - 110*	*03/17/16 10:10*	*04/06/16 11:37*	*1*

Lab Sample ID: LCS 160-240870/2-A
Matrix: Water
Analysis Batch: 244606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 240870

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.4	17.19		1.80	1.00	0.357	pCi/L	112	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*109*		*40 - 110*
Y Carrier	*78.1*		*40 - 110*

Metals

Prep Batch: 221986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total Recoverable	Ground Water	3005A	
280-80613-2	MW-4EB	Total Recoverable	Water	3005A	
LCS 240-221986/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-221986/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 223425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total Recoverable	Ground Water	6020A	221986
280-80613-2	MW-4EB	Total Recoverable	Water	6020A	221986
LCS 240-221986/2-A	Lab Control Sample	Total Recoverable	Water	6020A	221986
MB 240-221986/1-A	Method Blank	Total Recoverable	Water	6020A	221986

Analysis Batch: 223620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total Recoverable	Ground Water	6020A	221986
280-80613-2	MW-4EB	Total Recoverable	Water	6020A	221986
LCS 240-221986/2-A	Lab Control Sample	Total Recoverable	Water	6020A	221986
MB 240-221986/1-A	Method Blank	Total Recoverable	Water	6020A	221986

Prep Batch: 317361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	7470A	
280-80613-2	MW-4EB	Total/NA	Water	7470A	
LCS 280-317361/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 280-317361/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 280-317361/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 318118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	7470A	317361
280-80613-2	MW-4EB	Total/NA	Water	7470A	317361
LCS 280-317361/2-A	Lab Control Sample	Total/NA	Water	7470A	317361
LCSD 280-317361/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	317361
MB 280-317361/1-A	Method Blank	Total/NA	Water	7470A	317361

General Chemistry

Analysis Batch: 316636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-2	MW-4EB	Total/NA	Water	SM 2540C	
LCS 280-316636/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-316636/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-316636/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 316686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	SM 2540C	
LCS 280-316686/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-316686/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-316686/1	Method Blank	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 317133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	SM 2540D	
280-80613-2	MW-4EB	Total/NA	Water	SM 2540D	
LCS 280-317133/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-317133/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 318384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	9056A	
280-80613-1	MW-4	Total/NA	Ground Water	9056A	
280-80613-2	MW-4EB	Total/NA	Water	9056A	
LCS 280-318384/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-318384/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-318384/6	Method Blank	Total/NA	Water	9056A	
MRL 280-318384/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 318608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	9040B	
280-80613-1 DU	MW-4	Total/NA	Ground Water	9040B	
280-80613-2	MW-4EB	Total/NA	Water	9040B	
LCS 280-318608/4	Lab Control Sample	Total/NA	Water	9040B	

Rad

Prep Batch: 240836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	PrecSep-21	
280-80613-2	MW-4EB	Total/NA	Water	PrecSep-21	
LCS 160-240836/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-240836/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 240870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-80613-1	MW-4	Total/NA	Ground Water	PrecSep_0	
280-80613-2	MW-4EB	Total/NA	Water	PrecSep_0	
LCS 160-240870/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-240870/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Client Sample ID: MW-4

Date Collected: 03/10/16 09:30
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221986	03/17/16 10:39	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	223425	03/26/16 02:48	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221986	03/17/16 10:39	WKD	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	223620	03/28/16 20:48	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317361	03/18/16 08:31	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	318118	03/24/16 17:15	CDH	TAL DEN
Total/NA	Analysis	9040B		1			318608	03/26/16 09:16	MAS	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	318384	03/28/16 23:49	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	318384	03/29/16 00:07	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	316686	03/12/16 14:49	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	317133	03/16/16 18:23	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			500.65 mL	1.0 g	240836	03/16/16 17:03	MRB	TAL SL
Total/NA	Analysis	9315		1	500.65 mL		244697	04/07/16 06:50	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.65 mL	1.0 g	240870	03/17/16 10:10	CMC	TAL SL
Total/NA	Analysis	9320		1	500.65 mL		244606	04/06/16 11:37	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			245272	04/11/16 13:05	RTM	TAL SL

Client Sample ID: MW-4EB

Date Collected: 03/10/16 10:00
Date Received: 03/11/16 11:06

Lab Sample ID: 280-80613-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	221986	03/17/16 10:39	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	223425	03/26/16 02:52	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	221986	03/17/16 10:39	WKD	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	223620	03/28/16 20:52	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	317361	03/18/16 08:31	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	318118	03/24/16 17:18	CDH	TAL DEN
Total/NA	Analysis	9040B		1			318608	03/26/16 09:26	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	318384	03/29/16 01:00	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316636	03/11/16 15:21	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	317133	03/16/16 18:23	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.78 mL	1.0 g	240836	03/16/16 17:03	MRB	TAL SL
Total/NA	Analysis	9315		1	1000.78 mL		244697	04/07/16 06:50	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.78 mL	1.0 g	240870	03/17/16 10:10	CMC	TAL SL
Total/NA	Analysis	9320		1	1000.78 mL		244606	04/06/16 11:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			245272	04/11/16 13:05	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Ground Water	Mercury
7470A	7470A	Water	Mercury
9040B		Ground Water	Temperature
9040B		Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-16 *
Illinois	NELAP	5	200004	07-31-16 *
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16 *
New Jersey	NELAP	2	OH001	06-30-16 *
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-80613 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228										Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D											
~~MW-4 SB~~ 3/10/16 MW-4	3/10/16	0930	G	Water	N	N	1	2	1	1	2										7	
~~MW-4 SB~~ MW-4FB	3/10/16	1000	G	Water	N	N	1	2	1	1	2										7	
~~MW-1 SB~~				Water		N																
~~MW-5 SB~~				Water		N																
~~MW-7 SB~~				Water		N																
~~MW-6 SB~~				Water		N																
~~MW-8 SB~~				Water		N																
~~MW-9 SB~~				Water		N																
~~MW-10 SB~~				Water		N																
~~MW-11 SB~~				Water		N																
~~MW-12 SB~~				Water		N																

3/10/16

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Justin Bills	3/10/16 1106		Megan Sup	3/10/16 1106	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 13.0 IR7-0.2 10 March Transfer stm

4/11/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-342632.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-80613-1

Address: 13715 Rider Trail North, ,	Due Date Requested: 4/6/2016
City: Earth City	TAT Requested (days):
State, Zip: MO, 63045	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:
Email:	WO #:
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379
Site: Xcel Energy CCR - Valmont Station	SSOW#:

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-4 (280-80613-1)	3/10/16	09:30 Mountain		Water			X	X	2	
MW-4EB (280-80613-2)	3/10/16	10:00 Mountain		Water			X	X	2	

Possible Hazard Identification
Unconfirmed

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 3/11/16 1615	Company TAT	Received by:	Date/Time: 3.14.16 0930	Company TASL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

2.0 | C1.5

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-342631.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 280-80613-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 4/4/2016			Preservation Codes:
City: North Canton	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			Other:
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			549

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-4 (280-80613-1)	3/10/16	09:30 Mountain		Water			X	1	Use Collision Cell
MW-4EB (280-80613-2)	3/10/16	10:00 Mountain		Water			X	1	Use Collision Cell

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/14/16 1575		[signature]	3-16-16 0940	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Canton Sample Receipt Form/Narrative Login # :_____
Canton Facility

Client Denver Site Name_____ Cooler unpacked by:

Cooler Received on 3-16-16 Opened on 3-16-16

FedEx: 1st Grd ~~Exp~~ UPS FAS Stetson Client Drop Off TestAmerica Courier Other_____

Receipt After-hours: Drop-off Date/Time_____ Storage Location_____

TestAmerica Cooler #_____ Foam Box ~~Client Cooler~~ Box Other_____

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other_____

COOLANT: ~~Wet Ice~~ Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# 48 (CF **-1.9** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN# 36 (CF **-1.5** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN# I8 (CF **-0.5** °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 2.5 °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were sample(s) at the correct pH upon receipt? Yes No ~~NA~~ pH Strip Lot# **HC559158**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s):_____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-80613-1

Login Number: 80613
List Number: 1
Creator: Muniz, Ashley T

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	False	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
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.	N/A	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-80613-1

Login Number: 80613
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 03/14/16 11:24 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.9, 5.2
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-80613-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)								
280-80613-1	MW-4	110								

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)								
280-80613-2	MW-4EB	104								
LCS 160-240836/2-A	Lab Control Sample	109								
MB 160-240836/1-A	Method Blank	105								

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)							
280-80613-1	MW-4	110	78.5							

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)							
280-80613-2	MW-4EB	104	86.9							
LCS 160-240870/2-A	Lab Control Sample	109	78.1							
MB 160-240870/1-A	Method Blank	105	81.1							

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-83538-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
6/21/2016 9:25:10 AM

Stephanie Kupper, Project Manager I
(303)736-0182
stephanie.kupper@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-83538-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-83538-1

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.

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.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

RECEIPT

The samples were received on 5/20/2016 at 2:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 4.8º C, 5.5º C, 5.5º C and 5.7º C.

Sample MW-9EB (280-83538-13) has a sample time of 11:35 on the COC and a time of 12:00 on the container label. Sample MW-1 (280-83538-3) has a sample time of 14:10 on the COC and a time of 11:50 on the container label. The samples were logged per the COC.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/26/2016 and analyzed on 06/01/2016 and 06/02/2016.

Barium, Calcium and Lead were detected in method blank MB 240-232064/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples MW-1P (280-83538-1)[10X], MW-7 (280-83538-2)[5X], MW-1 (280-83538-3)[5X], MW-3 (280-83538-4)[10X], MW-4 (280-83538-5)[10X], MW-6 (280-83538-6)[5X], MW-8 (280-83538-7)[5X], MW-9 (280-83538-8)[100X], MW-10 (280-83538-9)[100X], MW-11 (280-83538-10)[10X], MW-12 (280-83538-11)[20X] and MW-10D (280-83538-12)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 05/27/2016.

Job ID: 280-83538-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

TOTAL DISSOLVED SOLIDS

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 05/23/2016, 05/24/2016 and 05/26/2016.

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

TOTAL SUSPENDED SOLIDS

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 05/23/2016.

The following samples were diluted due to slow filtration and high Total Suspended Solids: MW-1 (280-83538-3), MW-4 (280-83538-5), MW-12 (280-83538-11). Elevated reporting limits (RLs) are provided.

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

CORROSIVITY (PH)

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 05/24/2016.

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

ANIONS (28 DAYS)

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 06/06/2016 and 06/08/2016.

Chloride and Sulfate were detected in method blank MB 280-328705/6 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples MW-1 (280-83538-3)[5X], MW-3 (280-83538-4)[20X], MW-4 (280-83538-5)[2X], MW-4 (280-83538-5)[50X], MW-6 (280-83538-6) [10X], MW-8 (280-83538-7)[20X], MW-9 (280-83538-8)[5X], MW-10 (280-83538-9)[5X], MW-11 (280-83538-10)[20X] and MW-10D (280-83538-12)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 05/26/2016 and analyzed on 06/17/2016.

Sample MW-1 (280-83538-3) was prepared at a reduced aliquot due to sediment and discoloration. The sample was not used to demonstrate batch duplicity to avoid matrix interference with homogeneity.

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

Job ID: 280-83538-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

RADIUM-228

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 05/26/2016 and 06/08/2016 and analyzed on 06/07/2016 and 06/14/2016.

Radium-228 was detected in method blank MB 160-253528/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Radium-228 failed the recovery criteria high for LCS 160-253528/2-A. This analyte was not observed above the requested limit of 1 pCi/l in the associated samples; therefore the sample data was not adversely affected by this excursion. The data have been qualified and reported.

Sample MW-1 (280-83538-3) was prepared at a reduced aliquot due to sediment and discoloration. The sample was not used to demonstrate batch duplicity to avoid matrix interference with homogeneity.

The following sample did not meet the radium-228 detection goal (1.00 pCi/L) due to the reduced sample volume attributed to matrix interferences: MW-1 (280-83538-3). The data have been qualified and reported.

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-1P (280-83538-1), MW-7 (280-83538-2), MW-1 (280-83538-3), MW-3 (280-83538-4), MW-4 (280-83538-5), MW-6 (280-83538-6), MW-8 (280-83538-7), MW-9 (280-83538-8), MW-10 (280-83538-9), MW-11 (280-83538-10), MW-12 (280-83538-11), MW-10D (280-83538-12) and MW-9EB (280-83538-13) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 06/20/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-1P — Lab Sample ID: 280-83538-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00097	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0027	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.16	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00031	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	96	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00021	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0011		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0099		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.022		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00055	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0024	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00027	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	1.1		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.0068	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.64	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	72		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.88		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	120		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	590		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	8.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 280-83538-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0011	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0013	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.024	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00072	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	42	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00031	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0011		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0093		0.0020	0.00060	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-83538-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0058	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0013	B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0059		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00025	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.27		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.038		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.64	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	50		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.42	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	110		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	750		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	42		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-83538-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00057	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.0017	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.14	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00049	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	85	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00031	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0016		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0057		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.026		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0015	B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0015	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00011	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.33		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.030		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.37	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.2	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	69		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.42	J	0.50	0.060	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1 (Continued) — Lab Sample ID: 280-83538-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	290	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	930		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	290		9.1	2.5	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-83538-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00097	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.019	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00043	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	510	B	10	2.4	mg/L	10		6020A	Total Recoverable
Cadmium	0.00020	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0010		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0031		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00098	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0012	B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.0017	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	1.4		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.076		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	6.96	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	44		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.081	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2300	B	100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3800		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	44		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-83538-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00030	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.022		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.038	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00027	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	420	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00037	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-4 (Continued) — Lab Sample ID: 280-83538-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0040		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0057		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0023	B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.27		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.000099	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.97		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.20		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.54	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.6	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	530	B	150	13	mg/L	50		9056A	Total/NA
Fluoride	3.3		1.0	0.12	mg/L	2		9056A	Total/NA
Sulfate	5800	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9400		100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	130		6.7	1.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-83538-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0022	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.034	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00023	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	290	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00018	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00071	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0028		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0012	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.0015	B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.018		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.36		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.046		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.37	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.2	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	310	B	30	2.5	mg/L	10		9056A	Total/NA
Fluoride	0.086	J	0.50	0.060	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Client Sample ID: MW-6 (Continued) — Lab Sample ID: 280-83538-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	750	B	50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1900		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	69		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-83538-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0020	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.014	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00011	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	490	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00014	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00035	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0019	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00045	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00039	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.016		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	0.61		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	0.095		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.25	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.6	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	140		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.064	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2500	B	100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	21		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-83538-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0011	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.043	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00013	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	110	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000080	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0087		0.0010	0.000021	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-9 (Continued) — Lab Sample ID: 280-83538-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.00062	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.16		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00040	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00084	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	11		2.0	1.1	mg/L	100		6020A	Total Recoverable
Lithium	0.023		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.74	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.8	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	58		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	560	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	8.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-83538-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0013	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.072	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00015	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	110	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000070	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0088		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.22		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00031	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00071	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	15		2.0	1.1	mg/L	100		6020A	Total Recoverable
Lithium	0.030		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.60	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.3	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	61		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.4		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	590	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-83538-10

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-11 (Continued) — Lab Sample ID: 280-83538-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0020	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.054	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00010	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	220	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000079	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.036		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.00069	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.058		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00080	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00050	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	2.4		0.20	0.11	mg/L	10		6020A	Total Recoverable
Lithium	0.046		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.41	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.6	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	110		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.9		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	1600	B	100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	2800		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-83538-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0030	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.071	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00013	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	170	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000079	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0092		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0018	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0025	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00083	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00026	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-12 (Continued) — Lab Sample ID: 280-83538-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.6		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	0.0011	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.14	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.42	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	0.68	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	940		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	51		6.7	1.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10D — Lab Sample ID: 280-83538-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0014	J	0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.074	B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.000099	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	110	B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.000072	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.0089		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.22		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00030	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.00063	J	0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	15		2.0	1.1	mg/L	100		6020A	Total Recoverable
Lithium	0.031		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.65	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	61		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.4		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	590	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9EB — Lab Sample ID: 280-83538-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0021	J B	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	0.45	J B	1.0	0.24	mg/L	1		6020A	Total Recoverable
Cobalt	0.000031	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-9EB (Continued)

Lab Sample ID: 280-83538-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0011	J	0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00054	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00022	J B	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Boron	0.013	J	0.020	0.011	mg/L	1		6020A	Total Recoverable
Lithium	0.00038	J	0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	6.01	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	20.5	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Sulfate	0.64	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	23		10	4.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-83538-1	MW-1P	Ground Water	05/20/16 10:40	05/20/16 14:20
280-83538-2	MW-7	Ground Water	05/20/16 12:30	05/20/16 14:20
280-83538-3	MW-1	Ground Water	05/19/16 14:10	05/20/16 14:20
280-83538-4	MW-3	Ground Water	05/19/16 11:15	05/20/16 14:20
280-83538-5	MW-4	Ground Water	05/20/16 12:10	05/20/16 14:20
280-83538-6	MW-6	Ground Water	05/18/16 14:20	05/20/16 14:20
280-83538-7	MW-8	Ground Water	05/18/16 15:25	05/20/16 14:20
280-83538-8	MW-9	Ground Water	05/18/16 11:35	05/20/16 14:20
280-83538-9	MW-10	Ground Water	05/17/16 15:45	05/20/16 14:20
280-83538-10	MW-11	Ground Water	05/17/16 11:55	05/20/16 14:20
280-83538-11	MW-12	Ground Water	05/17/16 14:30	05/20/16 14:20
280-83538-12	MW-10D	Ground Water	05/17/16 15:45	05/20/16 14:20
280-83538-13	MW-9EB	Ground Water	05/18/16 11:35	05/20/16 14:20

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00097	J	0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 15:17	1
Arsenic	0.0027	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 15:17	1
Barium	0.16	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 15:17	1
Beryllium	0.00031	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 15:17	1
Calcium	96	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 15:17	1
Cadmium	0.00021	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 15:17	1
Cobalt	0.0011		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 15:17	1
Chromium	0.0099		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 15:17	1
Molybdenum	0.022		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 15:17	1
Lead	0.00055	J B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 15:17	1
Selenium	0.0024	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 15:17	1
Thallium	0.00027	J	0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 15:17	1
Boron	1.1		0.20	0.11	mg/L		05/26/16 10:27	06/02/16 15:17	10
Lithium	0.0068	J	0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 15:17	1

Client Sample ID: MW-7
Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0011	J	0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 15:37	1
Arsenic	0.0013	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 15:37	1
Barium	0.024	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 15:37	1
Beryllium	0.00072	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 15:37	1
Calcium	42	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 15:37	1
Cadmium	0.00031	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 15:37	1
Cobalt	0.0011		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 15:37	1
Chromium	0.0093		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 15:37	1
Molybdenum	0.0058	J	0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 15:37	1
Lead	0.0013	B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 15:37	1
Selenium	0.0059		0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 15:37	1
Thallium	0.00025	J	0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 15:37	1
Boron	0.27		0.10	0.055	mg/L		05/26/16 10:27	06/02/16 15:37	5
Lithium	0.038		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 15:37	1

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00057	J	0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 15:41	1
Arsenic	0.0017	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 15:41	1
Barium	0.14	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 15:41	1
Beryllium	0.00049	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 15:41	1
Calcium	85	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 15:41	1
Cadmium	0.00031	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 15:41	1
Cobalt	0.0016		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 15:41	1
Chromium	0.0057		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 15:41	1
Molybdenum	0.026		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 15:41	1
Lead	0.0015	B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 15:41	1
Selenium	0.0015	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 15:41	1
Thallium	0.00011	J	0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 15:41	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.33		0.10	0.055	mg/L		05/26/16 10:27	06/02/16 15:41	5
Lithium	0.030		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 15:41	1

Client Sample ID: MW-3
Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 15:45	1
Arsenic	0.00097	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 15:45	1
Barium	0.019	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 15:45	1
Beryllium	0.00043	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 15:45	1
Calcium	510	B	10	2.4	mg/L		05/26/16 10:27	06/02/16 15:53	10
Cadmium	0.00020	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 15:45	1
Cobalt	0.0010		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 15:45	1
Chromium	0.0031		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 15:45	1
Molybdenum	0.00098	J	0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 15:45	1
Lead	0.0012	B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 15:45	1
Selenium	0.0017	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 15:45	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 15:45	1
Boron	1.4		0.20	0.11	mg/L		05/26/16 10:27	06/02/16 15:53	10
Lithium	0.076		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 15:45	1

Client Sample ID: MW-4
Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00030	J	0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 15:58	1
Arsenic	0.022		0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 15:58	1
Barium	0.038	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 15:58	1
Beryllium	0.00027	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 15:58	1
Calcium	420	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 15:58	1
Cadmium	0.00037	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 15:58	1
Cobalt	0.0040		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 15:58	1
Chromium	0.0057		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 15:58	1
Molybdenum	0.015		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 15:58	1
Lead	0.0023	B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 15:58	1
Selenium	0.27		0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 15:58	1
Thallium	0.000099	J	0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 15:58	1
Boron	0.97		0.20	0.11	mg/L		05/26/16 10:27	06/02/16 15:57	10
Lithium	0.20		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 15:58	1

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:02	1
Arsenic	0.0022	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:02	1
Barium	0.034	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:02	1
Beryllium	0.00023	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:02	1
Calcium	290	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:02	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00018	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:02	1
Cobalt	0.00071	J	0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:02	1
Chromium	0.0028		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:02	1
Molybdenum	0.0012	J	0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:02	1
Lead	0.0015	B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:02	1
Selenium	0.018		0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:02	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:02	1
Boron	0.36		0.10	0.055	mg/L		05/26/16 10:27	06/02/16 16:02	5
Lithium	0.046		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:02	1

Client Sample ID: MW-8
Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:06	1
Arsenic	0.0020	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:06	1
Barium	0.014	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:06	1
Beryllium	0.00011	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:06	1
Calcium	490	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:06	1
Cadmium	0.00014	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:06	1
Cobalt	0.00035	J	0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:06	1
Chromium	0.0019	J	0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:06	1
Molybdenum	0.00045	J	0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:06	1
Lead	0.00039	J B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:06	1
Selenium	0.016		0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:06	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:06	1
Boron	0.61		0.10	0.055	mg/L		05/26/16 10:27	06/02/16 16:06	5
Lithium	0.095		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:06	1

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:10	1
Arsenic	0.0011	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:10	1
Barium	0.043	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:10	1
Beryllium	0.00013	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:10	1
Calcium	110	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:10	1
Cadmium	0.000080	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:10	1
Cobalt	0.0087		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:10	1
Chromium	0.00062	J	0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:10	1
Molybdenum	0.16		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:10	1
Lead	0.00040	J B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:10	1
Selenium	0.00084	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:10	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:10	1
Boron	11		2.0	1.1	mg/L		05/26/16 10:27	06/02/16 16:10	100
Lithium	0.023		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:10	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-10
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:14	1
Arsenic	0.0013	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:14	1
Barium	0.072	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:14	1
Beryllium	0.00015	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:14	1
Calcium	110	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:14	1
Cadmium	0.000070	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:14	1
Cobalt	0.0088		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:14	1
Chromium	ND		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:14	1
Molybdenum	0.22		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:14	1
Lead	0.00031	J B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:14	1
Selenium	0.00071	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:14	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:14	1
Boron	15		2.0	1.1	mg/L		05/26/16 10:27	06/02/16 16:14	100
Lithium	0.030		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:14	1

Client Sample ID: MW-11
Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:18	1
Arsenic	0.0020	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:18	1
Barium	0.054	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:18	1
Beryllium	0.00010	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:18	1
Calcium	220	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:18	1
Cadmium	0.000079	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:18	1
Cobalt	0.036		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:18	1
Chromium	0.00069	J	0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:18	1
Molybdenum	0.058		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:18	1
Lead	0.00080	J B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:18	1
Selenium	0.00050	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:18	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:18	1
Boron	2.4		0.20	0.11	mg/L		05/26/16 10:27	06/02/16 16:18	10
Lithium	0.046		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:18	1

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:22	1
Arsenic	0.0030	J	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:22	1
Barium	0.071	B	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:22	1
Beryllium	0.00013	J	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:22	1
Calcium	170	B	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:22	1
Cadmium	0.000079	J	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:22	1
Cobalt	0.0092		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:22	1
Chromium	0.0018	J	0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:22	1
Molybdenum	0.0025	J	0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:22	1
Lead	0.00083	J B	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:22	1
Selenium	0.00026	J	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:22	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:22	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.6**		0.40	0.22	mg/L		05/26/16 10:27	06/02/16 16:22	20
Lithium	**0.0011**	**J**	0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:22	1

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:26	1
Arsenic	**0.0014**	**J**	0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:26	1
Barium	**0.074**	**B**	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:26	1
Beryllium	**0.000099**	**J**	0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:26	1
Calcium	**110**	**B**	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:26	1
Cadmium	**0.000072**	**J**	0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:26	1
Cobalt	**0.0089**		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:26	1
Chromium	ND		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:26	1
Molybdenum	**0.22**		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:26	1
Lead	**0.00030**	**J B**	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:26	1
Selenium	**0.00063**	**J**	0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:26	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:26	1
Boron	**15**		2.0	1.1	mg/L		05/26/16 10:27	06/02/16 16:26	100
Lithium	**0.031**		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:26	1

Client Sample ID: MW-9EB
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 16:30	1
Arsenic	ND		0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 16:30	1
Barium	**0.0021**	**J B**	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 16:30	1
Beryllium	ND		0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 16:30	1
Calcium	**0.45**	**J B**	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 16:30	1
Cadmium	ND		0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 16:30	1
Cobalt	**0.000031**	**J**	0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 16:30	1
Chromium	**0.0011**	**J**	0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 16:30	1
Molybdenum	**0.00054**	**J**	0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 16:30	1
Lead	**0.00022**	**J B**	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 16:30	1
Selenium	ND		0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 16:30	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 16:30	1
Boron	**0.013**	**J**	0.020	0.011	mg/L		05/26/16 10:27	06/02/16 16:30	1
Lithium	**0.00038**	**J**	0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 16:30	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:29	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-7
Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:36	1

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:39	1

Client Sample ID: MW-3
Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:41	1

Client Sample ID: MW-4
Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:43	1

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:46	1

Client Sample ID: MW-8
Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:48	1

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:51	1

Client Sample ID: MW-10
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:58	1

Client Sample ID: MW-11
Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 19:01	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 19:03	1

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 19:06	1

Client Sample ID: MW-9EB
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 19:08	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.64	HF	0.100	0.100	SU			05/24/16 22:22	1
Temperature	20.4	HF	1.00	1.00	Degrees C			05/24/16 22:22	1
Chloride	72		3.0	0.25	mg/L			06/06/16 12:09	1
Fluoride	0.88		0.50	0.060	mg/L			06/06/16 12:09	1
Sulfate	120		5.0	0.23	mg/L			06/06/16 12:09	1
Total Dissolved Solids (TDS)	590		10	4.7	mg/L			05/24/16 12:28	1
Total Suspended Solids	8.0		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-7
Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.64	HF	0.100	0.100	SU			05/24/16 22:17	1
Temperature	20.4	HF	1.00	1.00	Degrees C			05/24/16 22:17	1
Chloride	50		3.0	0.25	mg/L			06/06/16 13:20	1
Fluoride	0.42	J	0.50	0.060	mg/L			06/06/16 13:20	1
Sulfate	110		5.0	0.23	mg/L			06/06/16 13:20	1
Total Dissolved Solids (TDS)	750		10	4.7	mg/L			05/24/16 12:28	1
Total Suspended Solids	42		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.37	HF	0.100	0.100	SU			05/24/16 22:33	1
Temperature	20.2	HF	1.00	1.00	Degrees C			05/24/16 22:33	1
Chloride	69		3.0	0.25	mg/L			06/06/16 13:37	1
Fluoride	0.42	J	0.50	0.060	mg/L			06/06/16 13:37	1
Sulfate	290	B	25	1.2	mg/L			06/08/16 09:05	5
Total Dissolved Solids (TDS)	930		10	4.7	mg/L			05/24/16 12:28	1
Total Suspended Solids	290		9.1	2.5	mg/L			05/23/16 15:48	1

Client Sample ID: MW-3
Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	6.96	HF	0.100	0.100	SU			05/24/16 22:28	1
Temperature	20.4	HF	1.00	1.00	Degrees C			05/24/16 22:28	1
Chloride	44		3.0	0.25	mg/L			06/06/16 13:55	1
Fluoride	0.081	J	0.50	0.060	mg/L			06/06/16 13:55	1
Sulfate	2300	B	100	4.6	mg/L			06/08/16 10:51	20
Total Dissolved Solids (TDS)	3800		20	9.4	mg/L			05/24/16 12:28	1
Total Suspended Solids	44		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-4
Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.54	HF	0.100	0.100	SU			05/24/16 22:51	1
Temperature	20.6	HF	1.00	1.00	Degrees C			05/24/16 22:51	1
Chloride	530	B	150	13	mg/L			06/08/16 11:09	50
Fluoride	3.3		1.0	0.12	mg/L			06/06/16 14:13	2
Sulfate	5800	B	250	12	mg/L			06/08/16 11:09	50
Total Dissolved Solids (TDS)	9400		100	47	mg/L			05/26/16 12:22	1
Total Suspended Solids	130		6.7	1.8	mg/L			05/23/16 15:48	1

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.37	HF	0.100	0.100	SU			05/24/16 22:38	1
Temperature	20.2	HF	1.00	1.00	Degrees C			05/24/16 22:38	1
Chloride	310	B	30	2.5	mg/L			06/08/16 11:26	10
Fluoride	0.086	J	0.50	0.060	mg/L			06/06/16 14:31	1
Sulfate	750	B	50	2.3	mg/L			06/08/16 11:26	10
Total Dissolved Solids (TDS)	1900		20	9.4	mg/L			05/23/16 13:55	1
Total Suspended Solids	69		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-8
Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.25	HF	0.100	0.100	SU			05/24/16 23:02	1
Temperature	20.6	HF	1.00	1.00	Degrees C			05/24/16 23:02	1
Chloride	140		3.0	0.25	mg/L			06/06/16 14:48	1
Fluoride	0.064	J	0.50	0.060	mg/L			06/06/16 14:48	1
Sulfate	2500	B	100	4.6	mg/L			06/08/16 11:44	20
Total Dissolved Solids (TDS)	4000		40	19	mg/L			05/24/16 12:29	1
Total Suspended Solids	21		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.74	HF	0.100	0.100	SU			05/24/16 22:57	1
Temperature	20.8	HF	1.00	1.00	Degrees C			05/24/16 22:57	1
Chloride	58		3.0	0.25	mg/L			06/06/16 15:41	1
Fluoride	2.8		0.50	0.060	mg/L			06/06/16 15:41	1

General Chemistry (Continued)

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	560	B	25	1.2	mg/L			06/08/16 12:02	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			05/23/16 13:55	1
Total Suspended Solids	8.0		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-10
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.60	HF	0.100	0.100	SU			05/24/16 22:46	1
Temperature	20.3	HF	1.00	1.00	Degrees C			05/24/16 22:46	1
Chloride	61		3.0	0.25	mg/L			06/06/16 15:59	1
Fluoride	3.4		0.50	0.060	mg/L			06/06/16 15:59	1
Sulfate	590	B	25	1.2	mg/L			06/08/16 12:20	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			05/23/16 13:55	1
Total Suspended Solids	2.4	J	4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-11
Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.41	HF	0.100	0.100	SU			05/24/16 23:22	1
Temperature	20.6	HF	1.00	1.00	Degrees C			05/24/16 23:22	1
Chloride	110		3.0	0.25	mg/L			06/06/16 16:17	1
Fluoride	2.9		0.50	0.060	mg/L			06/06/16 16:17	1
Sulfate	1600	B	100	4.6	mg/L			06/08/16 12:37	20
Total Dissolved Solids (TDS)	2800		20	9.4	mg/L			05/23/16 13:55	1
Total Suspended Solids	6.0		4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.14	HF	0.100	0.100	SU			05/24/16 23:17	1
Temperature	20.5	HF	1.00	1.00	Degrees C			05/24/16 23:17	1
Chloride	43		3.0	0.25	mg/L			06/06/16 16:34	1
Fluoride	0.42	J	0.50	0.060	mg/L			06/06/16 16:34	1
Sulfate	0.68	J	5.0	0.23	mg/L			06/06/16 16:34	1
Total Dissolved Solids (TDS)	940		10	4.7	mg/L			05/23/16 13:55	1
Total Suspended Solids	51		6.7	1.8	mg/L			05/23/16 15:48	1

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.65	HF	0.100	0.100	SU			05/24/16 23:12	1
Temperature	20.5	HF	1.00	1.00	Degrees C			05/24/16 23:12	1
Chloride	61		3.0	0.25	mg/L			06/06/16 16:52	1
Fluoride	3.4		0.50	0.060	mg/L			06/06/16 16:52	1
Sulfate	590	B	25	1.2	mg/L			06/08/16 12:55	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			05/23/16 13:55	1

General Chemistry (Continued)

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**1.6**	**J**	4.0	1.1	mg/L			05/23/16 15:48	1

Client Sample ID: MW-9EB
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**6.01**	**HF**	0.100	0.100	SU			05/24/16 23:07	1
Temperature	**20.5**	**HF**	1.00	1.00	Degrees C			05/24/16 23:07	1
Chloride	ND		3.0	0.25	mg/L			06/06/16 17:10	1
Fluoride	ND		0.50	0.060	mg/L			06/06/16 17:10	1
Sulfate	**0.64**	**J**	5.0	0.23	mg/L			06/06/16 17:10	1
Total Dissolved Solids (TDS)	**23**		10	4.7	mg/L			05/23/16 13:55	1
Total Suspended Solids	ND		4.0	1.1	mg/L			05/23/16 15:48	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.0910**		0.0521	0.0527	1.00	0.0682	pCi/L	05/26/16 15:01	06/17/16 07:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*05/26/16 15:01*	*06/17/16 07:47*	*1*

Client Sample ID: MW-7
Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.188**		0.0679	0.0699	1.00	0.0715	pCi/L	05/26/16 15:01	06/17/16 07:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.2*		*40 - 110*	*05/26/16 15:01*	*06/17/16 07:47*	*1*

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.663**		0.181	0.191	1.00	0.136	pCi/L	05/26/16 15:01	06/17/16 07:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.0*		*40 - 110*	*05/26/16 15:01*	*06/17/16 07:47*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-3
Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.595		0.103	0.116	1.00	0.0758	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Client Sample ID: MW-4
Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.564		0.125	0.135	1.00	0.110	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	56.7		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.324		0.0911	0.0957	1.00	0.0922	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	70.9		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Client Sample ID: MW-8
Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.595		0.106	0.119	1.00	0.0843	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.182		0.0760	0.0778	1.00	0.0900	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	65.2		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-10
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.254		0.0738	0.0773	1.00	0.0667	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	83.5		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Client Sample ID: MW-11
Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.264		0.0985	0.101	1.00	0.113	pCi/L	05/26/16 15:01	06/17/16 07:50	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	53.0		40 - 110	05/26/16 15:01	06/17/16 07:50	1

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.133		0.0694	0.0705	1.00	0.0893	pCi/L	05/26/16 15:01	06/17/16 07:51	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	64.4		40 - 110	05/26/16 15:01	06/17/16 07:51	1

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.217		0.0661	0.0689	1.00	0.0638	pCi/L	05/26/16 15:01	06/17/16 07:51	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110	05/26/16 15:01	06/17/16 07:51	1

Client Sample ID: MW-9EB
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0362	U	0.0369	0.0370	1.00	0.0579	pCi/L	05/26/16 15:01	06/17/16 07:51	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.6		40 - 110	05/26/16 15:01	06/17/16 07:51	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.977	*	0.356	0.367	1.00	0.495	pCi/L	05/26/16 16:02	06/07/16 13:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:36*	*1*
Y Carrier	*80.0*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:36*	*1*

Client Sample ID: MW-7
Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.834	*	0.502	0.508	1.00	0.770	pCi/L	05/26/16 16:02	06/07/16 13:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.2*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:37*	*1*
Y Carrier	*53.8*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:37*	*1*

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.61	G	0.758	0.773	1.00	1.09	pCi/L	06/08/16 13:52	06/14/16 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*40 - 110*	*06/08/16 13:52*	*06/14/16 12:56*	*1*
Y Carrier	*75.1*		*40 - 110*	*06/08/16 13:52*	*06/14/16 12:56*	*1*

Client Sample ID: MW-3
Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.957	*	0.315	0.327	1.00	0.410	pCi/L	05/26/16 16:02	06/07/16 13:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:37*	*1*
Y Carrier	*74.4*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:37*	*1*

Client Sample ID: MW-4
Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.963	*	0.540	0.547	1.00	0.822	pCi/L	05/26/16 16:02	06/07/16 13:37	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	56.7		40 - 110	05/26/16 16:02	06/07/16 13:37	1
Y Carrier	75.9		40 - 110	05/26/16 16:02	06/07/16 13:37	1

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.352	U *	0.340	0.341	1.00	0.551	pCi/L	05/26/16 16:02	06/07/16 13:37	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	70.9		40 - 110	05/26/16 16:02	06/07/16 13:37	1
Y Carrier	82.6		40 - 110	05/26/16 16:02	06/07/16 13:37	1

Client Sample ID: MW-8
Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.812**	*	0.295	0.305	1.00	0.400	pCi/L	05/26/16 16:02	06/07/16 13:37	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110	05/26/16 16:02	06/07/16 13:37	1
Y Carrier	80.4		40 - 110	05/26/16 16:02	06/07/16 13:37	1

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.301	U *	0.355	0.356	1.00	0.586	pCi/L	05/26/16 16:02	06/07/16 13:38	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	65.2		40 - 110	05/26/16 16:02	06/07/16 13:38	1
Y Carrier	78.1		40 - 110	05/26/16 16:02	06/07/16 13:38	1

Client Sample ID: MW-10
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.229	U *	0.256	0.257	1.00	0.419	pCi/L	05/26/16 16:02	06/07/16 13:38	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	83.5		40 - 110	05/26/16 16:02	06/07/16 13:38	1
Y Carrier	80.7		40 - 110	05/26/16 16:02	06/07/16 13:38	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-11
Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.770	U *	0.517	0.522	1.00	0.805	pCi/L	05/26/16 16:02	06/07/16 13:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*53.0*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:38*	*1*
Y Carrier	*79.3*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:38*	*1*

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0506	U *	0.332	0.332	1.00	0.587	pCi/L	05/26/16 16:02	06/07/16 13:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.4*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:38*	*1*
Y Carrier	*79.3*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:38*	*1*

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U *	0.256	0.257	1.00	0.413	pCi/L	05/26/16 16:02	06/07/16 13:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:38*	*1*
Y Carrier	*75.9*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:38*	*1*

Client Sample ID: MW-9EB
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0496	U *	0.220	0.220	1.00	0.389	pCi/L	05/26/16 16:02	06/07/16 13:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.6*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:39*	*1*
Y Carrier	*78.9*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P
Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07		0.360	0.371	5.00	0.495	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-7
Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.02		0.506	0.512	5.00	0.770	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-1
Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.27		0.780	0.796	5.00	1.09	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-3
Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.55		0.332	0.347	5.00	0.410	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-4
Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.53		0.555	0.564	5.00	0.822	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-6
Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.676		0.352	0.355	5.00	0.551	pCi/L		06/20/16 18:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-8
Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.41		0.314	0.327	5.00	0.400	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-9
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.483	U	0.363	0.365	5.00	0.586	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-10
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.484		0.266	0.268	5.00	0.419	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-11
Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.03		0.527	0.532	5.00	0.805	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-12
Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.184	U	0.339	0.339	5.00	0.587	pCi/L		06/20/16 18:38	1

Client Sample ID: MW-10D
Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.481		0.264	0.266	5.00	0.413	pCi/L		06/20/16 18:38	1

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-9EB
Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0858	U	0.223	0.223	5.00	0.389	pCi/L		06/20/16 18:38	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-232064/1-A
Matrix: Water
Analysis Batch: 232729

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/26/16 10:27	06/01/16 15:09	1
Arsenic	ND		0.0050	0.00049	mg/L		05/26/16 10:27	06/01/16 15:09	1
Barium	0.00135	J	0.0050	0.0011	mg/L		05/26/16 10:27	06/01/16 15:09	1
Beryllium	ND		0.0010	0.000053	mg/L		05/26/16 10:27	06/01/16 15:09	1
Calcium	0.377	J	1.0	0.24	mg/L		05/26/16 10:27	06/01/16 15:09	1
Cadmium	ND		0.0010	0.000061	mg/L		05/26/16 10:27	06/01/16 15:09	1
Cobalt	ND		0.0010	0.000021	mg/L		05/26/16 10:27	06/01/16 15:09	1
Chromium	ND		0.0020	0.00060	mg/L		05/26/16 10:27	06/01/16 15:09	1
Molybdenum	ND		0.010	0.00023	mg/L		05/26/16 10:27	06/01/16 15:09	1
Lead	0.000124	J	0.0010	0.00011	mg/L		05/26/16 10:27	06/01/16 15:09	1
Selenium	ND		0.0050	0.00025	mg/L		05/26/16 10:27	06/01/16 15:09	1
Thallium	ND		0.0010	0.000074	mg/L		05/26/16 10:27	06/01/16 15:09	1
Lithium	ND		0.0080	0.00029	mg/L		05/26/16 10:27	06/01/16 15:09	1

Lab Sample ID: MB 240-232064/1-A
Matrix: Water
Analysis Batch: 233012

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020	0.011	mg/L		05/26/16 10:27	06/02/16 15:08	1

Lab Sample ID: LCS 240-232064/2-A
Matrix: Water
Analysis Batch: 232729

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0979		mg/L		98	80 - 120
Arsenic	1.00	0.994		mg/L		99	80 - 120
Barium	1.00	0.981		mg/L		98	80 - 120
Beryllium	1.00	0.971		mg/L		97	80 - 120
Calcium	10.0	9.17		mg/L		92	80 - 120
Cadmium	1.00	1.00		mg/L		100	80 - 120
Cobalt	1.00	1.00		mg/L		100	80 - 120
Chromium	1.00	0.986		mg/L		99	80 - 120
Molybdenum	0.100	0.0995		mg/L		99	80 - 120
Lead	1.00	1.03		mg/L		103	80 - 120
Selenium	1.00	1.01		mg/L		101	80 - 120
Thallium	0.250	0.260		mg/L		104	80 - 120
Lithium	0.100	0.0966		mg/L		97	80 - 120

Lab Sample ID: LCS 240-232064/2-A
Matrix: Water
Analysis Batch: 233012

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.0999		mg/L		100	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-83538-1 MS
Matrix: Ground Water
Analysis Batch: 232729

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00097	J	0.100	0.100		mg/L		99	75 - 125
Arsenic	0.0027	J	1.00	1.02		mg/L		101	75 - 125
Barium	0.16	B	1.00	1.16		mg/L		100	75 - 125
Beryllium	0.00031	J	1.00	0.967		mg/L		97	75 - 125
Calcium	96	B	10.0	108	4	mg/L		121	75 - 125
Cadmium	0.00021	J	1.00	0.987		mg/L		99	75 - 125
Cobalt	0.0011		1.00	0.987		mg/L		99	75 - 125
Chromium	0.0099		1.00	0.995		mg/L		99	75 - 125
Molybdenum	0.022		0.100	0.126		mg/L		104	75 - 125
Lead	0.00055	J B	1.00	1.00		mg/L		100	75 - 125
Selenium	0.0024	J	1.00	0.995		mg/L		99	75 - 125
Thallium	0.00027	J	0.250	0.253		mg/L		101	75 - 125
Lithium	0.0068	J	0.100	0.104		mg/L		97	75 - 125

Lab Sample ID: 280-83538-1 MS
Matrix: Ground Water
Analysis Batch: 233012

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.1		0.100	1.15	4	mg/L		97	75 - 125

Lab Sample ID: 280-83538-1 MSD
Matrix: Ground Water
Analysis Batch: 232729

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00097	J	0.100	0.100		mg/L		99	75 - 125	0	20
Arsenic	0.0027	J	1.00	1.02		mg/L		101	75 - 125	0	20
Barium	0.16	B	1.00	1.16		mg/L		100	75 - 125	0	20
Beryllium	0.00031	J	1.00	0.957		mg/L		96	75 - 125	1	20
Calcium	96	B	10.0	105	4	mg/L		99	75 - 125	2	20
Cadmium	0.00021	J	1.00	0.992		mg/L		99	75 - 125	0	20
Cobalt	0.0011		1.00	0.987		mg/L		99	75 - 125	0	20
Chromium	0.0099		1.00	0.987		mg/L		98	75 - 125	1	20
Molybdenum	0.022		0.100	0.127		mg/L		105	75 - 125	0	20
Lead	0.00055	J B	1.00	1.01		mg/L		101	75 - 125	1	20
Selenium	0.0024	J	1.00	1.00		mg/L		100	75 - 125	1	20
Thallium	0.00027	J	0.250	0.259		mg/L		103	75 - 125	2	20
Lithium	0.0068	J	0.100	0.103		mg/L		96	75 - 125	1	20

Lab Sample ID: 280-83538-1 MSD
Matrix: Ground Water
Analysis Batch: 233012

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 232064

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.1		0.100	1.18	4	mg/L		122	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-326930/1-A
Matrix: Water
Analysis Batch: 327547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 326930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/27/16 12:20	05/27/16 18:09	1

Lab Sample ID: LCS 280-326930/2-A
Matrix: Water
Analysis Batch: 327547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 326930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.10		ug/L		102	84 - 120

Lab Sample ID: 280-83538-1 MS
Matrix: Ground Water
Analysis Batch: 327547

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 326930

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		5.00	5.02		ug/L		100	75 - 125

Lab Sample ID: 280-83538-1 MSD
Matrix: Ground Water
Analysis Batch: 327547

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 326930

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		5.00	5.04		ug/L		101	75 - 125	0	20

Method: 9040B - pH

Lab Sample ID: LCS 280-327048/4
Matrix: Water
Analysis Batch: 327048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	6.940		SU		99	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-328487/6
Matrix: Water
Analysis Batch: 328487

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			06/06/16 09:56	1
Fluoride	ND		0.50	0.060	mg/L			06/06/16 09:56	1
Sulfate	ND		5.0	0.23	mg/L			06/06/16 09:56	1

Lab Sample ID: LCS 280-328487/4
Matrix: Water
Analysis Batch: 328487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	101		mg/L		101	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-328487/4
Matrix: Water
Analysis Batch: 328487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.00	5.22		mg/L		104	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-328487/5
Matrix: Water
Analysis Batch: 328487

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.21		mg/L		104	90 - 110	0	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-328487/3
Matrix: Water
Analysis Batch: 328487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.42	J	mg/L		97	50 - 150
Fluoride	0.200	0.143	J	mg/L		71	50 - 150
Sulfate	2.50	2.46	J	mg/L		98	50 - 150

Lab Sample ID: 280-83538-1 MS
Matrix: Ground Water
Analysis Batch: 328487

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	72		25.0	99.0		mg/L		107	80 - 120
Fluoride	0.88		5.00	5.69		mg/L		96	80 - 120
Sulfate	120		25.0	145	4	mg/L		102	80 - 120

Lab Sample ID: 280-83538-1 MSD
Matrix: Ground Water
Analysis Batch: 328487

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	72		25.0	99.0		mg/L		106	80 - 120	0	20
Fluoride	0.88		5.00	5.75		mg/L		98	80 - 120	1	20
Sulfate	120		25.0	145	4	mg/L		103	80 - 120	0	20

Lab Sample ID: 280-83538-1 DU
Matrix: Ground Water
Analysis Batch: 328487

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	72		72.6		mg/L		0.2	15
Fluoride	0.88		0.878		mg/L		0.3	15
Sulfate	120		119		mg/L		0.07	15

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-328705/6
Matrix: Water
Analysis Batch: 328705

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.605	J	3.0	0.25	mg/L			06/07/16 11:13	1
Sulfate	1.32	J	5.0	0.23	mg/L			06/07/16 11:13	1

Lab Sample ID: LCS 280-328705/4
Matrix: Water
Analysis Batch: 328705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	101		mg/L		101	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-328705/5
Matrix: Water
Analysis Batch: 328705

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-328705/3
Matrix: Water
Analysis Batch: 328705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.60	J	mg/L		104	50 - 150
Sulfate	2.50	2.76	J	mg/L		110	50 - 150

Lab Sample ID: 280-83538-3 MS
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	70	B	125	198		mg/L		102	80 - 120
Sulfate	290	B	125	410		mg/L		94	80 - 120

Lab Sample ID: 280-83538-3 MSD
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	70	B	125	195		mg/L		100	80 - 120	1	20
Sulfate	290	B	125	408		mg/L		92	80 - 120	1	20

Lab Sample ID: 280-83538-12 MS
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-10D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	61	B	125	188		mg/L		102	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-83538-12 MS
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-10D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	590	B	125	705	4	mg/L		92	80 - 120

Lab Sample ID: 280-83538-12 MSD
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-10D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	61	B	125	189		mg/L		102	80 - 120	0	20
Sulfate	590	B	125	704	4	mg/L		91	80 - 120	0	20

Lab Sample ID: 280-83538-3 DU
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	70	B	68.6		mg/L		2	15
Sulfate	290	B	288		mg/L		2	15

Lab Sample ID: 280-83538-12 DU
Matrix: Ground Water
Analysis Batch: 328705

Client Sample ID: MW-10D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	61	B	60.5		mg/L		1	15
Sulfate	590	B	584		mg/L		1	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-326563/1
Matrix: Water
Analysis Batch: 326563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/23/16 13:55	1

Lab Sample ID: LCS 280-326563/2
Matrix: Water
Analysis Batch: 326563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	496		mg/L		99	86 - 110

Lab Sample ID: LCSD 280-326563/3
Matrix: Water
Analysis Batch: 326563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	492		mg/L		98	86 - 110	1	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 280-326749/1
Matrix: Water
Analysis Batch: 326749

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/24/16 12:28	1

Lab Sample ID: LCS 280-326749/2
Matrix: Water
Analysis Batch: 326749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	483		mg/L		96	86 - 110

Lab Sample ID: 280-83538-1 DU
Matrix: Ground Water
Analysis Batch: 326749

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	590		576		mg/L		2	10

Lab Sample ID: MB 280-326750/1
Matrix: Water
Analysis Batch: 326750

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/24/16 12:29	1

Lab Sample ID: LCS 280-326750/2
Matrix: Water
Analysis Batch: 326750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	496		mg/L		99	86 - 110

Lab Sample ID: MB 280-327214/1
Matrix: Water
Analysis Batch: 327214

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/26/16 12:22	1

Lab Sample ID: LCS 280-327214/2
Matrix: Water
Analysis Batch: 327214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	497		mg/L		99	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-326582/3
Matrix: Water
Analysis Batch: 326582

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/23/16 15:48	1

Lab Sample ID: LCS 280-326582/1
Matrix: Water
Analysis Batch: 326582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	94.0		mg/L		94	86 - 114

Lab Sample ID: LCSD 280-326582/2
Matrix: Water
Analysis Batch: 326582

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	100	95.6		mg/L		96	86 - 114	2	20

Lab Sample ID: 280-83538-10 DU
Matrix: Ground Water
Analysis Batch: 326582

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	6.0		6.00		mg/L		0	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-253442/1-A
Matrix: Water
Analysis Batch: 256885

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253442

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0007959	U	0.0390	0.0390	1.00	0.0758	pCi/L	05/26/16 15:01	06/17/16 07:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*05/26/16 15:01*	*06/17/16 07:47*	*1*

Lab Sample ID: LCS 160-253442/2-A
Matrix: Water
Analysis Batch: 256885

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253442

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	14.36		1.39	1.00	0.0923	pCi/L	129	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.0*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-253528/1-A
Matrix: Water
Analysis Batch: 255209

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253528

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.6478		0.300	0.305	1.00	0.437	pCi/L	05/26/16 16:02	06/07/16 13:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:36*	*1*
Y Carrier	*79.6*		*40 - 110*	*05/26/16 16:02*	*06/07/16 13:36*	*1*

Lab Sample ID: LCS 160-253528/2-A
Matrix: Water
Analysis Batch: 255209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253528

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.0	21.35	*	2.25	1.00	0.508	pCi/L	142	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.0*		*40 - 110*
Y Carrier	*78.5*		*40 - 110*

Lab Sample ID: MB 160-255485/1-A
Matrix: Water
Analysis Batch: 256310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255485

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3069	U	0.244	0.246	1.00	0.385	pCi/L	06/08/16 13:52	06/14/16 12:55	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.3*		*40 - 110*	*06/08/16 13:52*	*06/14/16 12:55*	*1*
Y Carrier	*77.0*		*40 - 110*	*06/08/16 13:52*	*06/14/16 12:55*	*1*

Lab Sample ID: LCS 160-255485/2-A
Matrix: Water
Analysis Batch: 256310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255485

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.0	20.73		2.15	1.00	0.377	pCi/L	138	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.7*		*40 - 110*
Y Carrier	*79.3*		*40 - 110*

Metals

Prep Batch: 232064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total Recoverable	Ground Water	3005A	
280-83538-1 MS	MW-1P	Total Recoverable	Ground Water	3005A	
280-83538-1 MSD	MW-1P	Total Recoverable	Ground Water	3005A	
280-83538-2	MW-7	Total Recoverable	Ground Water	3005A	
280-83538-3	MW-1	Total Recoverable	Ground Water	3005A	
280-83538-4	MW-3	Total Recoverable	Ground Water	3005A	
280-83538-5	MW-4	Total Recoverable	Ground Water	3005A	
280-83538-6	MW-6	Total Recoverable	Ground Water	3005A	
280-83538-7	MW-8	Total Recoverable	Ground Water	3005A	
280-83538-8	MW-9	Total Recoverable	Ground Water	3005A	
280-83538-9	MW-10	Total Recoverable	Ground Water	3005A	
280-83538-10	MW-11	Total Recoverable	Ground Water	3005A	
280-83538-11	MW-12	Total Recoverable	Ground Water	3005A	
280-83538-12	MW-10D	Total Recoverable	Ground Water	3005A	
280-83538-13	MW-9EB	Total Recoverable	Ground Water	3005A	
LCS 240-232064/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-232064/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 232729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total Recoverable	Ground Water	6020A	232064
280-83538-1 MS	MW-1P	Total Recoverable	Ground Water	6020A	232064
280-83538-1 MSD	MW-1P	Total Recoverable	Ground Water	6020A	232064
280-83538-2	MW-7	Total Recoverable	Ground Water	6020A	232064
280-83538-3	MW-1	Total Recoverable	Ground Water	6020A	232064
280-83538-4	MW-3	Total Recoverable	Ground Water	6020A	232064
280-83538-5	MW-4	Total Recoverable	Ground Water	6020A	232064
280-83538-6	MW-6	Total Recoverable	Ground Water	6020A	232064
280-83538-7	MW-8	Total Recoverable	Ground Water	6020A	232064
280-83538-8	MW-9	Total Recoverable	Ground Water	6020A	232064
280-83538-9	MW-10	Total Recoverable	Ground Water	6020A	232064
280-83538-10	MW-11	Total Recoverable	Ground Water	6020A	232064
280-83538-11	MW-12	Total Recoverable	Ground Water	6020A	232064
280-83538-12	MW-10D	Total Recoverable	Ground Water	6020A	232064
280-83538-13	MW-9EB	Total Recoverable	Ground Water	6020A	232064
LCS 240-232064/2-A	Lab Control Sample	Total Recoverable	Water	6020A	232064
MB 240-232064/1-A	Method Blank	Total Recoverable	Water	6020A	232064

Analysis Batch: 233012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total Recoverable	Ground Water	6020A	232064
280-83538-1 MS	MW-1P	Total Recoverable	Ground Water	6020A	232064
280-83538-1 MSD	MW-1P	Total Recoverable	Ground Water	6020A	232064
280-83538-2	MW-7	Total Recoverable	Ground Water	6020A	232064
280-83538-3	MW-1	Total Recoverable	Ground Water	6020A	232064
280-83538-4	MW-3	Total Recoverable	Ground Water	6020A	232064
280-83538-5	MW-4	Total Recoverable	Ground Water	6020A	232064
280-83538-6	MW-6	Total Recoverable	Ground Water	6020A	232064
280-83538-7	MW-8	Total Recoverable	Ground Water	6020A	232064
280-83538-8	MW-9	Total Recoverable	Ground Water	6020A	232064
280-83538-9	MW-10	Total Recoverable	Ground Water	6020A	232064

Metals (Continued)

Analysis Batch: 233012 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-10	MW-11	Total Recoverable	Ground Water	6020A	232064
280-83538-11	MW-12	Total Recoverable	Ground Water	6020A	232064
280-83538-12	MW-10D	Total Recoverable	Ground Water	6020A	232064
280-83538-13	MW-9EB	Total Recoverable	Ground Water	6020A	232064
LCS 240-232064/2-A	Lab Control Sample	Total Recoverable	Water	6020A	232064
MB 240-232064/1-A	Method Blank	Total Recoverable	Water	6020A	232064

Prep Batch: 326930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	7470A	
280-83538-1 MS	MW-1P	Total/NA	Ground Water	7470A	
280-83538-1 MSD	MW-1P	Total/NA	Ground Water	7470A	
280-83538-2	MW-7	Total/NA	Ground Water	7470A	
280-83538-3	MW-1	Total/NA	Ground Water	7470A	
280-83538-4	MW-3	Total/NA	Ground Water	7470A	
280-83538-5	MW-4	Total/NA	Ground Water	7470A	
280-83538-6	MW-6	Total/NA	Ground Water	7470A	
280-83538-7	MW-8	Total/NA	Ground Water	7470A	
280-83538-8	MW-9	Total/NA	Ground Water	7470A	
280-83538-9	MW-10	Total/NA	Ground Water	7470A	
280-83538-10	MW-11	Total/NA	Ground Water	7470A	
280-83538-11	MW-12	Total/NA	Ground Water	7470A	
280-83538-12	MW-10D	Total/NA	Ground Water	7470A	
280-83538-13	MW-9EB	Total/NA	Ground Water	7470A	
LCS 280-326930/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-326930/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 327547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	7470A	326930
280-83538-1 MS	MW-1P	Total/NA	Ground Water	7470A	326930
280-83538-1 MSD	MW-1P	Total/NA	Ground Water	7470A	326930
280-83538-2	MW-7	Total/NA	Ground Water	7470A	326930
280-83538-3	MW-1	Total/NA	Ground Water	7470A	326930
280-83538-4	MW-3	Total/NA	Ground Water	7470A	326930
280-83538-5	MW-4	Total/NA	Ground Water	7470A	326930
280-83538-6	MW-6	Total/NA	Ground Water	7470A	326930
280-83538-7	MW-8	Total/NA	Ground Water	7470A	326930
280-83538-8	MW-9	Total/NA	Ground Water	7470A	326930
280-83538-9	MW-10	Total/NA	Ground Water	7470A	326930
280-83538-10	MW-11	Total/NA	Ground Water	7470A	326930
280-83538-11	MW-12	Total/NA	Ground Water	7470A	326930
280-83538-12	MW-10D	Total/NA	Ground Water	7470A	326930
280-83538-13	MW-9EB	Total/NA	Ground Water	7470A	326930
LCS 280-326930/2-A	Lab Control Sample	Total/NA	Water	7470A	326930
MB 280-326930/1-A	Method Blank	Total/NA	Water	7470A	326930

General Chemistry

Analysis Batch: 326563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-6	MW-6	Total/NA	Ground Water	SM 2540C	
280-83538-8	MW-9	Total/NA	Ground Water	SM 2540C	
280-83538-9	MW-10	Total/NA	Ground Water	SM 2540C	
280-83538-10	MW-11	Total/NA	Ground Water	SM 2540C	
280-83538-11	MW-12	Total/NA	Ground Water	SM 2540C	
280-83538-12	MW-10D	Total/NA	Ground Water	SM 2540C	
280-83538-13	MW-9EB	Total/NA	Ground Water	SM 2540C	
LCS 280-326563/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-326563/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-326563/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 326582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	SM 2540D	
280-83538-2	MW-7	Total/NA	Ground Water	SM 2540D	
280-83538-3	MW-1	Total/NA	Ground Water	SM 2540D	
280-83538-4	MW-3	Total/NA	Ground Water	SM 2540D	
280-83538-5	MW-4	Total/NA	Ground Water	SM 2540D	
280-83538-6	MW-6	Total/NA	Ground Water	SM 2540D	
280-83538-7	MW-8	Total/NA	Ground Water	SM 2540D	
280-83538-8	MW-9	Total/NA	Ground Water	SM 2540D	
280-83538-9	MW-10	Total/NA	Ground Water	SM 2540D	
280-83538-10	MW-11	Total/NA	Ground Water	SM 2540D	
280-83538-10 DU	MW-11	Total/NA	Ground Water	SM 2540D	
280-83538-11	MW-12	Total/NA	Ground Water	SM 2540D	
280-83538-12	MW-10D	Total/NA	Ground Water	SM 2540D	
280-83538-13	MW-9EB	Total/NA	Ground Water	SM 2540D	
LCS 280-326582/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-326582/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
MB 280-326582/3	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 326749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	SM 2540C	
280-83538-1 DU	MW-1P	Total/NA	Ground Water	SM 2540C	
280-83538-2	MW-7	Total/NA	Ground Water	SM 2540C	
280-83538-3	MW-1	Total/NA	Ground Water	SM 2540C	
280-83538-4	MW-3	Total/NA	Ground Water	SM 2540C	
LCS 280-326749/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-326749/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 326750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-7	MW-8	Total/NA	Ground Water	SM 2540C	
LCS 280-326750/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-326750/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 327048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	9040B	
280-83538-2	MW-7	Total/NA	Ground Water	9040B	

General Chemistry (Continued)

Analysis Batch: 327048 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-3	MW-1	Total/NA	Ground Water	9040B	
280-83538-4	MW-3	Total/NA	Ground Water	9040B	
280-83538-5	MW-4	Total/NA	Ground Water	9040B	
280-83538-6	MW-6	Total/NA	Ground Water	9040B	
280-83538-7	MW-8	Total/NA	Ground Water	9040B	
280-83538-8	MW-9	Total/NA	Ground Water	9040B	
280-83538-9	MW-10	Total/NA	Ground Water	9040B	
280-83538-10	MW-11	Total/NA	Ground Water	9040B	
280-83538-11	MW-12	Total/NA	Ground Water	9040B	
280-83538-12	MW-10D	Total/NA	Ground Water	9040B	
280-83538-13	MW-9EB	Total/NA	Ground Water	9040B	
LCS 280-327048/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 327214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-5	MW-4	Total/NA	Ground Water	SM 2540C	
LCS 280-327214/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-327214/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 328487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	9056A	
280-83538-1 DU	MW-1P	Total/NA	Ground Water	9056A	
280-83538-1 MS	MW-1P	Total/NA	Ground Water	9056A	
280-83538-1 MSD	MW-1P	Total/NA	Ground Water	9056A	
280-83538-2	MW-7	Total/NA	Ground Water	9056A	
280-83538-3	MW-1	Total/NA	Ground Water	9056A	
280-83538-4	MW-3	Total/NA	Ground Water	9056A	
280-83538-5	MW-4	Total/NA	Ground Water	9056A	
280-83538-6	MW-6	Total/NA	Ground Water	9056A	
280-83538-7	MW-8	Total/NA	Ground Water	9056A	
280-83538-8	MW-9	Total/NA	Ground Water	9056A	
280-83538-9	MW-10	Total/NA	Ground Water	9056A	
280-83538-10	MW-11	Total/NA	Ground Water	9056A	
280-83538-11	MW-12	Total/NA	Ground Water	9056A	
280-83538-12	MW-10D	Total/NA	Ground Water	9056A	
280-83538-13	MW-9EB	Total/NA	Ground Water	9056A	
LCS 280-328487/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-328487/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-328487/6	Method Blank	Total/NA	Water	9056A	
MRL 280-328487/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 328705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-3	MW-1	Total/NA	Ground Water	9056A	
280-83538-3 DU	MW-1	Total/NA	Ground Water	9056A	
280-83538-3 MS	MW-1	Total/NA	Ground Water	9056A	
280-83538-3 MSD	MW-1	Total/NA	Ground Water	9056A	
280-83538-4	MW-3	Total/NA	Ground Water	9056A	
280-83538-5	MW-4	Total/NA	Ground Water	9056A	
280-83538-6	MW-6	Total/NA	Ground Water	9056A	

General Chemistry (Continued)

Analysis Batch: 328705 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-7	MW-8	Total/NA	Ground Water	9056A	
280-83538-8	MW-9	Total/NA	Ground Water	9056A	
280-83538-9	MW-10	Total/NA	Ground Water	9056A	
280-83538-10	MW-11	Total/NA	Ground Water	9056A	
280-83538-12	MW-10D	Total/NA	Ground Water	9056A	
280-83538-12 DU	MW-10D	Total/NA	Ground Water	9056A	
280-83538-12 MS	MW-10D	Total/NA	Ground Water	9056A	
280-83538-12 MSD	MW-10D	Total/NA	Ground Water	9056A	
LCS 280-328705/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-328705/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-328705/6	Method Blank	Total/NA	Water	9056A	
MRL 280-328705/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 253442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	PrecSep-21	
280-83538-2	MW-7	Total/NA	Ground Water	PrecSep-21	
280-83538-3	MW-1	Total/NA	Ground Water	PrecSep-21	
280-83538-4	MW-3	Total/NA	Ground Water	PrecSep-21	
280-83538-5	MW-4	Total/NA	Ground Water	PrecSep-21	
280-83538-6	MW-6	Total/NA	Ground Water	PrecSep-21	
280-83538-7	MW-8	Total/NA	Ground Water	PrecSep-21	
280-83538-8	MW-9	Total/NA	Ground Water	PrecSep-21	
280-83538-9	MW-10	Total/NA	Ground Water	PrecSep-21	
280-83538-10	MW-11	Total/NA	Ground Water	PrecSep-21	
280-83538-11	MW-12	Total/NA	Ground Water	PrecSep-21	
280-83538-12	MW-10D	Total/NA	Ground Water	PrecSep-21	
280-83538-13	MW-9EB	Total/NA	Ground Water	PrecSep-21	
LCS 160-253442/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-253442/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 253528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-1	MW-1P	Total/NA	Ground Water	PrecSep_0	
280-83538-2	MW-7	Total/NA	Ground Water	PrecSep_0	
280-83538-4	MW-3	Total/NA	Ground Water	PrecSep_0	
280-83538-5	MW-4	Total/NA	Ground Water	PrecSep_0	
280-83538-6	MW-6	Total/NA	Ground Water	PrecSep_0	
280-83538-7	MW-8	Total/NA	Ground Water	PrecSep_0	
280-83538-8	MW-9	Total/NA	Ground Water	PrecSep_0	
280-83538-9	MW-10	Total/NA	Ground Water	PrecSep_0	
280-83538-10	MW-11	Total/NA	Ground Water	PrecSep_0	
280-83538-11	MW-12	Total/NA	Ground Water	PrecSep_0	
280-83538-12	MW-10D	Total/NA	Ground Water	PrecSep_0	
280-83538-13	MW-9EB	Total/NA	Ground Water	PrecSep_0	
LCS 160-253528/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-253528/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 255485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-83538-3	MW-1	Total/NA	Ground Water	PrecSep_0	
LCS 160-255485/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-255485/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-1P

Date Collected: 05/20/16 10:40
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 15:17	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	233012	06/02/16 15:17	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:29	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:22	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 12:09	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326749	05/24/16 12:28	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.56 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.56 mL		256885	06/17/16 07:47	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.56 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.56 mL		255209	06/07/16 13:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 05/20/16 12:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 15:37	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	233012	06/02/16 15:37	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:36	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:17	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 13:20	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326749	05/24/16 12:28	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.65 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.65 mL		256885	06/17/16 07:47	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.65 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.65 mL		255209	06/07/16 13:37	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-1

Date Collected: 05/19/16 14:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 15:41	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	233012	06/02/16 15:41	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:39	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:33	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 13:37	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	328705	06/08/16 09:05	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326749	05/24/16 12:28	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	110 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			499.10 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	499.10 mL		256885	06/17/16 07:47	ALS	TAL SL
Total/NA	Prep	PrecSep_0			499.34 mL	1.0 g	255485	06/08/16 13:52	MCJ	TAL SL
Total/NA	Analysis	9320		1	499.34 mL		256310	06/14/16 12:56	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-3

Date Collected: 05/19/16 11:15
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 15:45	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	233012	06/02/16 15:53	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:41	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:28	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 13:55	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	328705	06/08/16 10:51	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	326749	05/24/16 12:28	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.04 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.04 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.04 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.04 mL		255209	06/07/16 13:37	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-4

Date Collected: 05/20/16 12:10
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 15:58	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	233012	06/02/16 15:57	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:43	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:51	MAS	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	328487	06/06/16 14:13	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	328705	06/08/16 11:09	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	327214	05/26/16 12:22	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	150 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.94 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.94 mL		255209	06/07/16 13:37	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 05/18/16 14:20
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:02	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	233012	06/02/16 16:02	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:46	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:38	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 14:31	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	328705	06/08/16 11:26	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.56 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.56 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.56 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.56 mL		255209	06/07/16 13:37	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 05/18/16 15:25
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:06	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	233012	06/02/16 16:06	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:48	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 23:02	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 14:48	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	328705	06/08/16 11:44	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	326750	05/24/16 12:29	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.42 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.42 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.42 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.42 mL		255209	06/07/16 13:37	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:10	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		100	50 mL	50 mL	233012	06/02/16 16:10	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:51	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:57	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 15:41	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	328705	06/08/16 12:02	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.95 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.95 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.95 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.95 mL		255209	06/07/16 13:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-10

Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:14	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		100	50 mL	50 mL	233012	06/02/16 16:14	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 18:58	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 22:46	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 15:59	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	328705	06/08/16 12:20	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.86 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.86 mL		255209	06/07/16 13:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-11

Date Collected: 05/17/16 11:55
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-10

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:18	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10	50 mL	50 mL	233012	06/02/16 16:18	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 19:01	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 23:22	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 16:17	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	328705	06/08/16 12:37	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.72 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.72 mL		256886	06/17/16 07:50	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.72 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.72 mL		255209	06/07/16 13:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-12

Date Collected: 05/17/16 14:30
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-11

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:22	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	233012	06/02/16 16:22	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 19:03	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 23:17	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 16:34	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	150 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.55 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.55 mL		256886	06/17/16 07:51	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.55 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.55 mL		255209	06/07/16 13:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Client Sample ID: MW-10D

Date Collected: 05/17/16 15:45
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-12

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:26	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		100	50 mL	50 mL	233012	06/02/16 16:26	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 19:06	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 23:12	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 16:52	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	328705	06/08/16 12:55	TLP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.05 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.05 mL		256886	06/17/16 07:51	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.05 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.05 mL		255209	06/07/16 13:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Client Sample ID: MW-9EB

Date Collected: 05/18/16 11:35
Date Received: 05/20/16 14:20

Lab Sample ID: 280-83538-13

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	232729	06/01/16 16:30	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	232064	05/26/16 10:27	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	233012	06/02/16 16:30	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	326930	05/27/16 12:20	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	327547	05/27/16 19:08	CDH	TAL DEN
Total/NA	Analysis	9040B		1			327048	05/24/16 23:07	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	328487	06/06/16 17:10	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326563	05/23/16 13:55	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	326582	05/23/16 15:48	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.76 mL	1.0 g	253442	05/26/16 15:01	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.76 mL		256886	06/17/16 07:51	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.76 mL	1.0 g	253528	05/26/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.76 mL		255209	06/07/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			257169	06/20/16 18:38	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Ground Water	Mercury
9040B		Ground Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-16 *
Illinois	NELAP	5	200004	07-31-16 *
Kansas	NELAP	7	E-10336	07-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16 *
New Jersey	NELAP	2	OH001	06-30-16 *
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16 *
Texas	NELAP	6	T104704517-15-5	08-31-16 *
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16 *

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16 *
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16 *
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16 *
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-16 *
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16 *
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 1
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 2
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:	Analysis Requested		
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Unit-6~~ 53 MW-1P	5/20/16	1040	G	Water	N		1	2	1	1	2	7	
MW-7	5/20/16	1230	|	Water	N		|	|	|	|	|	1	
MW-1	5/19/16	1410	|	Water	N		|	|	|	|	|	|	
MW-3	5/19/16	1115	|	Water	N		|	|	|	|	|	|	
MW-4	5/20/16	1210	|	Water	N		|	|	|	|	|	|	
MW-6	5/18/16	1420	|	Water	N		|	|	|	|	|	|	
MW-8	5/18/16	1525	|	Water	N		|	|	|	|	|	|	
MW-9	5/18/16	1135	|	Water	N		|	|	|	|	|	|	
MW-10	5/17/16	1545	|	Water	N		|	|	|	|	|	|	
MW-11	5/17/16	1155	|	Water	N		|	|	|	|	|	|	
MW-12	5/17/16	1430	↓	Water	N		↓	↓	↓	↓	↓	↓	

280-83538 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] HDR	5/20/16 1315	HDR	[signature]	5/20/16 1315	HDR
2	[signature]	5/20/16 1420	HDR	[signature]	5/20/16 1420	TAD
3						

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 5.8, 5.6, 9.9, 5.6 + 0.1 IR#s transfered by JT 05/20/16

Page 60 of 70

6/21/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 2
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 2 of 2
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
Preservation Code:							N	D	N	N	D		
~~Field Duplicate~~ MW-10D	5/17/16	1545	G	Water		N	1	2	1	1	2	7	
~~Equipment Blank~~ MW-9EB	5/18/16	1135	G	Water		N	1	2	1	1	2	7	

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/20/16 1315	HDR		5/20/16 1315	HDR
2		5/20/16 1420			5/20/16 1420	TAD
3						

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

6/21/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-352698.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 280-83538-1
Address: 13715 Rider Trail North,	Due Date Requested: 6/16/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 28014379			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	SSOW#:			
Site: Xcel Energy CCR - Valmont Station				

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1P (280-83538-1)	5/20/16	10:40 Mountain		Water			X	X	X	2	
MW-7 (280-83538-2)	5/20/16	12:30 Mountain		Water			X	X	X	2	
MW-1 (280-83538-3)	5/19/16	14:10 Mountain		Water			X	X	X	2	
MW-3 (280-83538-4)	5/19/16	11:15 Mountain		Water			X	X	X	2	
MW-4 (280-83538-5)	5/20/16	12:10 Mountain		Water			X	X	X	2	
MW-6 (280-83538-6)	5/18/16	14:20 Mountain		Water			X	X	X	2	
MW-8 (280-83538-7)	5/18/16	15:25 Mountain		Water			X	X	X	2	
MW-9 (280-83538-8)	5/18/16	11:35 Mountain		Water			X	X	X	2	
MW-10 (280-83538-9)	5/17/16	15:45 Mountain		Water			X	X	X	2	
MW-11 (280-83538-10)	5/17/16	11:55 Mountain		Water			X	X	X	2	
MW-12 (280-83538-11)	5/17/16	14:30 Mountain		Water			X	X	X	2	

Possible Hazard Identification
Unconfirmed

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

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

Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	52416 1500			05 25 16 0830	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Page 62 of 70

6/21/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-352698.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 280-83538-1

Address: 13715 Rider Trail North, ,	Due Date Requested: 6/16/2016
City: Earth City	TAT Requested (days):
State, Zip: MO, 63045	PO #:
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:
Email:	Project #: 28014379
Project Name: Xcel Energy GW CCR Monitoring - Valmont	SSOW#:
Site: Xcel Energy CCR - Valmont Station	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-10D (280-83538-12)	5/17/16	15:45 Mountain		Water			X	X	X	2	
MW-9EB (280-83538-13)	5/18/16	11:35 Mountain		Water			X	X	X	2	

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 5.24.16 1500	Company	Received by:	Date/Time: 05 25 16 0830	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

6/21/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

0.8/C0.3

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

6/21/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-352699.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 280-83538-1

Address: 4101 Shuffel Street NW,	Due Date Requested: 6/14/2016
City: North Canton	TAT Requested (days):
State, Zip: OH, 44720	PO #:
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	WO #:
Email:	Project #: 28014379
Project Name: Xcel Energy GW CCR Monitoring - Valmont	SSOW#:
Site: Xcel Energy CCR - Valmont Station	

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-1P (280-83538-1)	5/20/16	10:40 Mountain		Water			X	1	Use Collision Cell
MW-7 (280-83538-2)	5/20/16	12:30 Mountain		Water			X	1	Use Collision Cell
MW-1 (280-83538-3)	5/19/16	14:10 Mountain		Water			X	1	Use Collision Cell
MW-3 (280-83538-4)	5/19/16	11:15 Mountain		Water			X	1	Use Collision Cell
MW-4 (280-83538-5)	5/20/16	12:10 Mountain		Water			X	1	Use Collision Cell
MW-6 (280-83538-6)	5/18/16	14:20 Mountain		Water			X	1	Use Collision Cell
MW-8 (280-83538-7)	5/18/16	15:25 Mountain		Water			X	1	Use Collision Cell
MW-9 (280-83538-8)	5/18/16	11:35 Mountain		Water			X	1	Use Collision Cell
MW-10 (280-83538-9)	5/17/16	15:45 Mountain		Water			X	1	Use Collision Cell
MW-11 (280-83538-10)	5/17/16	11:55 Mountain		Water			X	1	Use Collision Cell
MW-12 (280-83538-11)	5/17/16	14:30 Mountain		Water			X	1	Use Collision Cell

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 5/24/16 1500	Company	Received by:	Date/Time: 05-25-16 Wam	Company TAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

6/21/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-352699.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 280-83538-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 6/14/2016			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
		Preservation Code:							
MW-10D (280-83538-12)	5/17/16	15:45 Mountain		Water			X	1	Use Collision Cell
MW-9EB (280-83538-13)	5/18/16	11:35 Mountain		Water			X	1	Use Collision Cell

Possible Hazard Identification
Unconfirmed

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/24/16 1500		[signature]	05-25-16 10 am	TAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Canton Sample Receipt Form/Narrative **Login # :**
Canton Facility

Client TA Denver Site Name 28014379 Cooler unpacked by: DSD

Cooler Received on 05-25-16 Opened on 05-25-16

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # 241-061 Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam (Plastic Bag) None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# 48 (CF -1.9 °C) Observed Cooler Temp. ____ °C Corrected Cooler Temp. ____ °C
   IR GUN# 36 (CF -1.5 °C) Observed Cooler Temp. ____ °C Corrected Cooler Temp. ____ °C
   IR GUN# I8 (CF -0.5 °C) Observed Cooler Temp. 0.8 °C Corrected Cooler Temp. 0.3 °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 (Yes) No
   -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes (No)
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Are these work share samples? (Yes) No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC559158
13. Were VOAs on the COC? Yes (No)
14. Were air bubbles >6 mm in any VOA vials? Yes (No) NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes (No)
16. Was a LL Hg or Me Hg trip blank present? Yes (No)

Contacted PM ____ Date ____ by ____ via Verbal Voice Mail Other

Concerning ____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) ____ were received after the recommended holding time had expired.

Sample(s) ____ were received in a broken container.

Sample(s) ____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) ____ were further preserved in the laboratory.

Time preserved: ____ Preservative(s) added/Lot number(s): ____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-83538-1

Login Number: 83538
List Number: 1
Creator: True, Joshua A

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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	TIME ON COC IS DIFFERNT THAN TIME ON CONTAINER
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.	N/A	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-83538-1

Login Number: 83538
List Number: 3
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 05/25/16 04:06 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0, 1.3, 2.0
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-83538-1	MW-1P	83.8
280-83538-2	MW-7	81.2
280-83538-3	MW-1	63.0
280-83538-4	MW-3	92.3
280-83538-5	MW-4	56.7
280-83538-6	MW-6	70.9
280-83538-7	MW-8	91.5
280-83538-8	MW-9	65.2
280-83538-9	MW-10	83.5
280-83538-10	MW-11	53.0
280-83538-11	MW-12	64.4
280-83538-12	MW-10D	92.0
280-83538-13	MW-9EB	88.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
LCS 160-253442/2-A	Lab Control Sample	84.0
MB 160-253442/1-A	Method Blank	92.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-83538-1	MW-1P	83.8	80.0
280-83538-2	MW-7	81.2	53.8
280-83538-3	MW-1	68.1	75.1
280-83538-4	MW-3	92.3	74.4
280-83538-5	MW-4	56.7	75.9
280-83538-6	MW-6	70.9	82.6
280-83538-7	MW-8	91.5	80.4
280-83538-8	MW-9	65.2	78.1
280-83538-9	MW-10	83.5	80.7
280-83538-10	MW-11	53.0	79.3
280-83538-11	MW-12	64.4	79.3
280-83538-12	MW-10D	92.0	75.9
280-83538-13	MW-9EB	88.6	78.9

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-83538-1

Ba = Ba Carrier
Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
LCS 160-253528/2-A	Lab Control Sample	84.0	78.5
LCS 160-255485/2-A	Lab Control Sample	93.7	79.3
MB 160-253528/1-A	Method Blank	92.3	79.6
MB 160-255485/1-A	Method Blank	98.3	77.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-87346-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Stephanie Rothmeyer

Authorized for release by:
9/23/2016 1:21:51 PM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

LINKS

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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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-87346-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-87346-1

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.

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.

RECEIPT

The samples were received on 8/25/2016 at 3:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 5.4º C and 5.9º C.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 08/31/2016 and analyzed on 09/03/2016 and 09/07/2016.

Barium, Calcium, Lead and Boron were detected in method blank MB 240-245011/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples MW-9 (280-87346-1)[100X], MW-10 (280-87346-2)[200X], MW-11 (280-87346-3)[50X], MW-12 (280-87346-4)[50X] and MW-12D (280-87346-5)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 09/14/2016.

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

TOTAL DISSOLVED SOLIDS

Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 08/26/2016.

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

TOTAL SUSPENDED SOLIDS

Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 08/31/2016.

Job ID: 280-87346-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Total Suspended Solids was detected in method blank MB 280-340316/2 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample 280-87306-4. Sample non-homogeneity is suspected.

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

CORROSIVITY (PH)
Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 08/26/2016.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 280-87230-5. Sample non-homogeneity is suspected.

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

ANIONS (28 DAYS)
Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 09/13/2016 and 09/14/2016.

Samples MW-9 (280-87346-1)[5X], MW-10 (280-87346-2)[5X] and MW-11 (280-87346-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 08/31/2016 and analyzed on 09/22/2016.

The following sample was prepared at a reduced aliquot due to limited volume: MW-9 (280-87346-1).

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

RADIUM-228
Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 08/31/2016 and analyzed on 09/15/2016.

Radium-228 was detected in method blank MB 160-267594/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The following sample was prepared at a reduced aliquot due to limited volume: MW-9 (280-87346-1).

The following sample did not meet the Ra-228 detection goal due to the reduced sample volume attributed to matrix interferences: MW-9 (280-87346-1). The data have been qualified and reported.

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

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-9 (280-87346-1), MW-10 (280-87346-2), MW-11 (280-87346-3), MW-12 (280-87346-4) and MW-12D (280-87346-5) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 09/22/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Client Sample ID: MW-9 — Lab Sample ID: 280-87346-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00072	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0021	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.074	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Beryllium	0.0016		0.0010	0.00040	mg/L	1		6020A	Total Recoverable
Calcium	120	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cadmium	0.00050	J	0.0010	0.00031	mg/L	1		6020A	Total Recoverable
Cobalt	0.010		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0028		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.15		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0019	B	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0014	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Thallium	0.00042	J	0.0010	0.00028	mg/L	1		6020A	Total Recoverable
Boron	12	B	2.0	0.25	mg/L	100		6020A	Total Recoverable
Lithium	0.022		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	57		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.0		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	550		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1100		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.2	B	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-87346-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0012	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.067	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	110	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0091		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00096	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.20		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00088	J B	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00053	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 280-87346-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	23	B	4.0	0.50	mg/L	200		6020A	Total Recoverable
Lithium	0.028		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	61		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.6		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	590		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	23		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-87346-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0055		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.065	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	150	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.011		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00073	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00074	J B	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Boron	3.2	B	1.0	0.13	mg/L	50		6020A	Total Recoverable
Lithium	0.0074	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	57		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.4		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	320		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	190		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-87346-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0027	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.089	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	170	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0083		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0031		0.0020	0.00026	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-12 (Continued) — Lab Sample ID: 280-87346-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0027	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0014	B	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Boron	3.8	B	1.0	0.13	mg/L	50		6020A	Total Recoverable
Lithium	0.0010	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.46	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	0.91	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	930		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	110		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12D — Lab Sample ID: 280-87346-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0028	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.098	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	170	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0086		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0049		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0029	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0020	B	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Boron	3.7	B	1.0	0.13	mg/L	50		6020A	Total Recoverable
Lithium	0.0017	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.47	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	0.97	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	920		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	140		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-87346-1	MW-9	Water	08/25/16 14:20	08/25/16 15:40
280-87346-2	MW-10	Water	08/25/16 12:50	08/25/16 15:40
280-87346-3	MW-11	Water	08/25/16 10:00	08/25/16 15:40
280-87346-4	MW-12	Water	08/25/16 11:30	08/25/16 15:40
280-87346-5	MW-12D	Water	08/25/16 11:30	08/25/16 15:40

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9
Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00072**	**J**	0.0020	0.00027	mg/L		08/31/16 14:00	09/03/16 04:32	1
Arsenic	**0.0021**	**J**	0.0050	0.00035	mg/L		08/31/16 14:00	09/03/16 04:32	1
Barium	**0.074**	**B**	0.0050	0.00052	mg/L		08/31/16 14:00	09/03/16 04:32	1
Beryllium	**0.0016**		0.0010	0.00040	mg/L		08/31/16 14:00	09/03/16 04:32	1
Calcium	**120**	**B**	1.0	0.043	mg/L		08/31/16 14:00	09/03/16 04:32	1
Cadmium	**0.00050**	**J**	0.0010	0.00031	mg/L		08/31/16 14:00	09/03/16 04:32	1
Cobalt	**0.010**		0.0010	0.00013	mg/L		08/31/16 14:00	09/03/16 04:32	1
Chromium	**0.0028**		0.0020	0.00026	mg/L		08/31/16 14:00	09/03/16 04:32	1
Molybdenum	**0.15**		0.010	0.00051	mg/L		08/31/16 14:00	09/03/16 04:32	1
Lead	**0.0019**	**B**	0.0010	0.00016	mg/L		08/31/16 14:00	09/03/16 04:32	1
Selenium	**0.0014**	**J**	0.0050	0.00048	mg/L		08/31/16 14:00	09/03/16 04:32	1
Thallium	**0.00042**	**J**	0.0010	0.00028	mg/L		08/31/16 14:00	09/03/16 04:32	1
Boron	**12**	**B**	2.0	0.25	mg/L		08/31/16 14:00	09/07/16 13:39	100
Lithium	**0.022**		0.0080	0.00016	mg/L		08/31/16 14:00	09/03/16 04:32	1

Client Sample ID: MW-10
Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		08/31/16 14:00	09/03/16 04:36	1
Arsenic	**0.0012**	**J**	0.0050	0.00035	mg/L		08/31/16 14:00	09/03/16 04:36	1
Barium	**0.067**	**B**	0.0050	0.00052	mg/L		08/31/16 14:00	09/03/16 04:36	1
Beryllium	ND		0.0010	0.00040	mg/L		08/31/16 14:00	09/03/16 04:36	1
Calcium	**110**	**B**	1.0	0.043	mg/L		08/31/16 14:00	09/03/16 04:36	1
Cadmium	ND		0.0010	0.00031	mg/L		08/31/16 14:00	09/03/16 04:36	1
Cobalt	**0.0091**		0.0010	0.00013	mg/L		08/31/16 14:00	09/03/16 04:36	1
Chromium	**0.00096**	**J**	0.0020	0.00026	mg/L		08/31/16 14:00	09/03/16 04:36	1
Molybdenum	**0.20**		0.010	0.00051	mg/L		08/31/16 14:00	09/03/16 04:36	1
Lead	**0.00088**	**J B**	0.0010	0.00016	mg/L		08/31/16 14:00	09/03/16 04:36	1
Selenium	**0.00053**	**J**	0.0050	0.00048	mg/L		08/31/16 14:00	09/03/16 04:36	1
Thallium	ND		0.0010	0.00028	mg/L		08/31/16 14:00	09/03/16 04:36	1
Boron	**23**	**B**	4.0	0.50	mg/L		08/31/16 14:00	09/07/16 13:55	200
Lithium	**0.028**		0.0080	0.00016	mg/L		08/31/16 14:00	09/03/16 04:36	1

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		08/31/16 14:00	09/03/16 04:48	1
Arsenic	**0.0055**		0.0050	0.00035	mg/L		08/31/16 14:00	09/03/16 04:48	1
Barium	**0.065**	**B**	0.0050	0.00052	mg/L		08/31/16 14:00	09/03/16 04:48	1
Beryllium	ND		0.0010	0.00040	mg/L		08/31/16 14:00	09/03/16 04:48	1
Calcium	**150**	**B**	1.0	0.043	mg/L		08/31/16 14:00	09/03/16 04:48	1
Cadmium	ND		0.0010	0.00031	mg/L		08/31/16 14:00	09/03/16 04:48	1
Cobalt	**0.011**		0.0010	0.00013	mg/L		08/31/16 14:00	09/03/16 04:48	1
Chromium	**0.00073**	**J**	0.0020	0.00026	mg/L		08/31/16 14:00	09/03/16 04:48	1
Molybdenum	**0.015**		0.010	0.00051	mg/L		08/31/16 14:00	09/03/16 04:48	1
Lead	**0.00074**	**J B**	0.0010	0.00016	mg/L		08/31/16 14:00	09/03/16 04:48	1
Selenium	ND		0.0050	0.00048	mg/L		08/31/16 14:00	09/03/16 04:48	1
Thallium	ND		0.0010	0.00028	mg/L		08/31/16 14:00	09/03/16 04:48	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.2**	**B**	1.0	0.13	mg/L		08/31/16 14:00	09/07/16 14:00	50
Lithium	**0.0074**	**J**	0.0080	0.00016	mg/L		08/31/16 14:00	09/03/16 04:48	1

Client Sample ID: MW-12
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		08/31/16 14:00	09/03/16 04:53	1
Arsenic	**0.0027**	**J**	0.0050	0.00035	mg/L		08/31/16 14:00	09/03/16 04:53	1
Barium	**0.089**	**B**	0.0050	0.00052	mg/L		08/31/16 14:00	09/03/16 04:53	1
Beryllium	ND		0.0010	0.00040	mg/L		08/31/16 14:00	09/03/16 04:53	1
Calcium	**170**	**B**	1.0	0.043	mg/L		08/31/16 14:00	09/03/16 04:53	1
Cadmium	ND		0.0010	0.00031	mg/L		08/31/16 14:00	09/03/16 04:53	1
Cobalt	**0.0083**		0.0010	0.00013	mg/L		08/31/16 14:00	09/03/16 04:53	1
Chromium	**0.0031**		0.0020	0.00026	mg/L		08/31/16 14:00	09/03/16 04:53	1
Molybdenum	**0.0027**	**J**	0.010	0.00051	mg/L		08/31/16 14:00	09/03/16 04:53	1
Lead	**0.0014**	**B**	0.0010	0.00016	mg/L		08/31/16 14:00	09/03/16 04:53	1
Selenium	ND		0.0050	0.00048	mg/L		08/31/16 14:00	09/03/16 04:53	1
Thallium	ND		0.0010	0.00028	mg/L		08/31/16 14:00	09/03/16 04:53	1
Boron	**3.8**	**B**	1.0	0.13	mg/L		08/31/16 14:00	09/07/16 14:04	50
Lithium	**0.0010**	**J**	0.0080	0.00016	mg/L		08/31/16 14:00	09/03/16 04:53	1

Client Sample ID: MW-12D
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		08/31/16 14:00	09/03/16 04:57	1
Arsenic	**0.0028**	**J**	0.0050	0.00035	mg/L		08/31/16 14:00	09/03/16 04:57	1
Barium	**0.098**	**B**	0.0050	0.00052	mg/L		08/31/16 14:00	09/03/16 04:57	1
Beryllium	ND		0.0010	0.00040	mg/L		08/31/16 14:00	09/03/16 04:57	1
Calcium	**170**	**B**	1.0	0.043	mg/L		08/31/16 14:00	09/03/16 04:57	1
Cadmium	ND		0.0010	0.00031	mg/L		08/31/16 14:00	09/03/16 04:57	1
Cobalt	**0.0086**		0.0010	0.00013	mg/L		08/31/16 14:00	09/03/16 04:57	1
Chromium	**0.0049**		0.0020	0.00026	mg/L		08/31/16 14:00	09/03/16 04:57	1
Molybdenum	**0.0029**	**J**	0.010	0.00051	mg/L		08/31/16 14:00	09/03/16 04:57	1
Lead	**0.0020**	**B**	0.0010	0.00016	mg/L		08/31/16 14:00	09/03/16 04:57	1
Selenium	ND		0.0050	0.00048	mg/L		08/31/16 14:00	09/03/16 04:57	1
Thallium	ND		0.0010	0.00028	mg/L		08/31/16 14:00	09/03/16 04:57	1
Boron	**3.7**	**B**	1.0	0.13	mg/L		08/31/16 14:00	09/07/16 14:08	50
Lithium	**0.0017**	**J**	0.0080	0.00016	mg/L		08/31/16 14:00	09/03/16 04:57	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-9
Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/14/16 11:25	09/14/16 17:38	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-10
Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/14/16 11:25	09/14/16 17:41	1

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/14/16 11:25	09/14/16 17:43	1

Client Sample ID: MW-12
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/14/16 11:25	09/14/16 17:45	1

Client Sample ID: MW-12D
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/14/16 11:25	09/14/16 17:47	1

General Chemistry

Client Sample ID: MW-9
Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			08/26/16 14:48	1
Temperature	22.1	HF	1.0	1.0	Degrees C			08/26/16 14:48	1
Chloride	57		3.0	0.25	mg/L			09/13/16 22:49	1
Fluoride	3.0		0.50	0.060	mg/L			09/13/16 22:49	1
Sulfate	550		25	1.2	mg/L			09/13/16 23:06	5
Total Dissolved Solids (TDS)	1100		10	4.7	mg/L			08/26/16 16:09	1
Total Suspended Solids	5.2	B	4.0	1.1	mg/L			08/31/16 11:54	1

Client Sample ID: MW-10
Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			08/26/16 14:53	1
Temperature	22.1	HF	1.0	1.0	Degrees C			08/26/16 14:53	1
Chloride	61		3.0	0.25	mg/L			09/13/16 23:24	1
Fluoride	3.6		0.50	0.060	mg/L			09/13/16 23:24	1
Sulfate	590		25	1.2	mg/L			09/13/16 23:42	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			08/26/16 16:09	1
Total Suspended Solids	23		4.0	1.1	mg/L			08/31/16 11:57	1

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			08/26/16 14:58	1

General Chemistry (Continued)

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	22.1	HF	1.0	1.0	Degrees C			08/26/16 14:58	1
Chloride	57		3.0	0.25	mg/L			09/13/16 23:59	1
Fluoride	2.4		0.50	0.060	mg/L			09/13/16 23:59	1
Sulfate	320		25	1.2	mg/L			09/14/16 00:17	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			08/26/16 16:09	1
Total Suspended Solids	190		4.0	1.1	mg/L			08/31/16 11:57	1

Client Sample ID: MW-12
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			08/26/16 15:04	1
Temperature	22.1	HF	1.0	1.0	Degrees C			08/26/16 15:04	1
Chloride	43		3.0	0.25	mg/L			09/14/16 00:35	1
Fluoride	0.46	J	0.50	0.060	mg/L			09/14/16 00:35	1
Sulfate	0.91	J	5.0	0.23	mg/L			09/14/16 00:35	1
Total Dissolved Solids (TDS)	930		10	4.7	mg/L			08/26/16 16:09	1
Total Suspended Solids	110		4.0	1.1	mg/L			08/31/16 11:57	1

Client Sample ID: MW-12D
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			08/26/16 15:09	1
Temperature	22.3	HF	1.0	1.0	Degrees C			08/26/16 15:09	1
Chloride	43		3.0	0.25	mg/L			09/14/16 01:10	1
Fluoride	0.47	J	0.50	0.060	mg/L			09/14/16 01:10	1
Sulfate	0.97	J	5.0	0.23	mg/L			09/14/16 01:10	1
Total Dissolved Solids (TDS)	920		10	4.7	mg/L			08/26/16 16:09	1
Total Suspended Solids	140		4.0	1.1	mg/L			08/31/16 11:57	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9
Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.410		0.151	0.155	1.00	0.155	pCi/L	08/31/16 17:03	09/22/16 07:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.4*		*40 - 110*	*08/31/16 17:03*	*09/22/16 07:27*	*1*

Client Sample ID: MW-10
Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.349		0.104	0.109	1.00	0.115	pCi/L	08/31/16 17:03	09/22/16 07:27	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	08/31/16 17:03	09/22/16 07:27	1

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.333		0.107	0.111	1.00	0.127	pCi/L	08/31/16 17:03	09/22/16 07:27	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	77.2		40 - 110	08/31/16 17:03	09/22/16 07:27	1

Client Sample ID: MW-12
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.247		0.0943	0.0969	1.00	0.116	pCi/L	08/31/16 17:06	09/22/16 07:27	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	08/31/16 17:06	09/22/16 07:27	1

Client Sample ID: MW-12D
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.345		0.104	0.108	1.00	0.0952	pCi/L	08/31/16 17:06	09/22/16 07:27	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	61.0		40 - 110	08/31/16 17:06	09/22/16 07:27	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-9
Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.19	G	0.675	0.684	1.00	1.02	pCi/L	08/31/16 18:45	09/15/16 13:29	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.4		40 - 110	08/31/16 18:45	09/15/16 13:29	1
Y Carrier	90.5		40 - 110	08/31/16 18:45	09/15/16 13:29	1

Client Sample ID: MW-10
Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.420	U	0.301	0.304	1.00	0.470	pCi/L	08/31/16 18:45	09/15/16 13:35	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	08/31/16 18:45	09/15/16 13:35	1
Y Carrier	90.1		40 - 110	08/31/16 18:45	09/15/16 13:35	1

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.309	U	0.307	0.308	1.00	0.498	pCi/L	08/31/16 18:45	09/15/16 13:35	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	77.2		40 - 110	08/31/16 18:45	09/15/16 13:35	1
Y Carrier	92.3		40 - 110	08/31/16 18:45	09/15/16 13:35	1

Client Sample ID: MW-12
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.139	U	0.295	0.295	1.00	0.505	pCi/L	08/31/16 18:45	09/15/16 13:36	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	08/31/16 18:45	09/15/16 13:36	1
Y Carrier	89.3		40 - 110	08/31/16 18:45	09/15/16 13:36	1

Client Sample ID: MW-12D
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.716**		0.370	0.375	1.00	0.544	pCi/L	08/31/16 18:45	09/15/16 13:36	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	61.0		40 - 110	08/31/16 18:45	09/15/16 13:36	1
Y Carrier	94.2		40 - 110	08/31/16 18:45	09/15/16 13:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-9
Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.60**		0.692	0.702	5.00	1.02	pCi/L		09/22/16 21:10	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-10
Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.769**		0.319	0.323	5.00	0.470	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-11
Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.643**		0.325	0.328	5.00	0.498	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-12
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.385	U	0.310	0.311	5.00	0.505	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-12D
Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.06**		0.384	0.391	5.00	0.544	pCi/L		09/22/16 21:10	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-245011/1-A
Matrix: Water
Analysis Batch: 245525

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 245011

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		08/31/16 14:00	09/03/16 04:04	1
Arsenic	ND		0.0050	0.00035	mg/L		08/31/16 14:00	09/03/16 04:04	1
Barium	0.000791	J	0.0050	0.00052	mg/L		08/31/16 14:00	09/03/16 04:04	1
Beryllium	ND		0.0010	0.00040	mg/L		08/31/16 14:00	09/03/16 04:04	1
Calcium	0.156	J	1.0	0.043	mg/L		08/31/16 14:00	09/03/16 04:04	1
Cadmium	ND		0.0010	0.00031	mg/L		08/31/16 14:00	09/03/16 04:04	1
Cobalt	ND		0.0010	0.00013	mg/L		08/31/16 14:00	09/03/16 04:04	1
Chromium	ND		0.0020	0.00026	mg/L		08/31/16 14:00	09/03/16 04:04	1
Molybdenum	ND		0.010	0.00051	mg/L		08/31/16 14:00	09/03/16 04:04	1
Lead	0.000241	J	0.0010	0.00016	mg/L		08/31/16 14:00	09/03/16 04:04	1
Selenium	ND		0.0050	0.00048	mg/L		08/31/16 14:00	09/03/16 04:04	1
Thallium	ND		0.0010	0.00028	mg/L		08/31/16 14:00	09/03/16 04:04	1
Lithium	ND		0.0080	0.00016	mg/L		08/31/16 14:00	09/03/16 04:04	1

Lab Sample ID: MB 240-245011/1-A
Matrix: Water
Analysis Batch: 245905

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 245011

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00348	J	0.020	0.0025	mg/L		08/31/16 14:00	09/07/16 13:31	1

Lab Sample ID: LCS 240-245011/2-A
Matrix: Water
Analysis Batch: 245525

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 245011

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.102		mg/L		102	80 - 120
Arsenic	1.00	0.956		mg/L		96	80 - 120
Barium	1.00	1.11		mg/L		111	80 - 120
Beryllium	1.00	0.935		mg/L		94	80 - 120
Calcium	10.0	10.7		mg/L		107	80 - 120
Cadmium	1.00	1.06		mg/L		106	80 - 120
Cobalt	1.00	1.15		mg/L		115	80 - 120
Chromium	1.00	1.11		mg/L		111	80 - 120
Molybdenum	0.100	0.0985		mg/L		98	80 - 120
Lead	1.00	1.07		mg/L		107	80 - 120
Selenium	1.00	0.945		mg/L		95	80 - 120
Thallium	0.250	0.258		mg/L		103	80 - 120
Lithium	0.100	0.0948		mg/L		95	80 - 120

Lab Sample ID: LCS 240-245011/2-A
Matrix: Water
Analysis Batch: 245905

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 245011

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.102		mg/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-341661/1-A
Matrix: Water
Analysis Batch: 342240

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 341661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/14/16 11:25	09/14/16 17:14	1

Lab Sample ID: LCS 280-341661/2-A
Matrix: Water
Analysis Batch: 342240

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 341661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.13		ug/L		103	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-339765/50
Matrix: Water
Analysis Batch: 339765

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-341862/6
Matrix: Water
Analysis Batch: 341862

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			09/13/16 11:10	1
Fluoride	ND		0.50	0.060	mg/L			09/13/16 11:10	1
Sulfate	ND		5.0	0.23	mg/L			09/13/16 11:10	1

Lab Sample ID: LCS 280-341862/4
Matrix: Water
Analysis Batch: 341862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	100		mg/L		100	90 - 110
Fluoride	5.00	5.12		mg/L		102	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-341862/5
Matrix: Water
Analysis Batch: 341862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.17		mg/L		103	90 - 110	1	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-341862/3
Matrix: Water
Analysis Batch: 341862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.60	J	mg/L		104	50 - 150
Fluoride	0.200	0.180	J	mg/L		90	50 - 150
Sulfate	2.50	2.66	J	mg/L		107	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-339774/1
Matrix: Water
Analysis Batch: 339774

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			08/26/16 16:09	1

Lab Sample ID: LCS 280-339774/2
Matrix: Water
Analysis Batch: 339774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	470		mg/L		94	86 - 110

Lab Sample ID: LCSD 280-339774/3
Matrix: Water
Analysis Batch: 339774

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	475		mg/L		95	86 - 110	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-340316/2
Matrix: Water
Analysis Batch: 340316

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.60	J	4.0	1.1	mg/L			08/31/16 11:54	1

Lab Sample ID: LCS 280-340316/1
Matrix: Water
Analysis Batch: 340316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	95.2		mg/L		95	86 - 114

Lab Sample ID: MB 280-340319/2
Matrix: Water
Analysis Batch: 340319

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			08/31/16 11:57	1

Lab Sample ID: LCS 280-340319/1
Matrix: Water
Analysis Batch: 340319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			100	93.2		mg/L		93	86 - 114		

Lab Sample ID: 280-87346-2 DU
Matrix: Water
Analysis Batch: 340319

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	23			21.6		mg/L				7	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-267591/1-A
Matrix: Water
Analysis Batch: 271155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267591

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01339	U	0.0397	0.0397	1.00	0.0736	pCi/L	08/31/16 17:03	09/22/16 07:19	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*08/31/16 17:03*	*09/22/16 07:19*	*1*

Lab Sample ID: LCS 160-267591/2-A
Matrix: Water
Analysis Batch: 271155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267591

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	14.09		1.38	1.00	0.0998	pCi/L	126	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-267594/1-A
Matrix: Water
Analysis Batch: 269955

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267594

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4597		0.292	0.295	1.00	0.445	pCi/L	08/31/16 18:45	09/15/16 13:07	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*08/31/16 18:45*	*09/15/16 13:07*	*1*
Y Carrier	*90.1*		*40 - 110*	*08/31/16 18:45*	*09/15/16 13:07*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-267594/2-A
Matrix: Water
Analysis Batch: 269955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267594

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			19.4	21.16		2.28	1.00	0.607	pCi/L	109	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.3*		*40 - 110*
Y Carrier	*89.3*		*40 - 110*

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Metals

Prep Batch: 245011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total Recoverable	Water	3005A	
280-87346-2	MW-10	Total Recoverable	Water	3005A	
280-87346-3	MW-11	Total Recoverable	Water	3005A	
280-87346-4	MW-12	Total Recoverable	Water	3005A	
280-87346-5	MW-12D	Total Recoverable	Water	3005A	
MB 240-245011/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-245011/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 245525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total Recoverable	Water	6020A	245011
280-87346-2	MW-10	Total Recoverable	Water	6020A	245011
280-87346-3	MW-11	Total Recoverable	Water	6020A	245011
280-87346-4	MW-12	Total Recoverable	Water	6020A	245011
280-87346-5	MW-12D	Total Recoverable	Water	6020A	245011
MB 240-245011/1-A	Method Blank	Total Recoverable	Water	6020A	245011
LCS 240-245011/2-A	Lab Control Sample	Total Recoverable	Water	6020A	245011

Analysis Batch: 245905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total Recoverable	Water	6020A	245011
280-87346-2	MW-10	Total Recoverable	Water	6020A	245011
280-87346-3	MW-11	Total Recoverable	Water	6020A	245011
280-87346-4	MW-12	Total Recoverable	Water	6020A	245011
280-87346-5	MW-12D	Total Recoverable	Water	6020A	245011
MB 240-245011/1-A	Method Blank	Total Recoverable	Water	6020A	245011
LCS 240-245011/2-A	Lab Control Sample	Total Recoverable	Water	6020A	245011

Prep Batch: 341661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	7470A	
280-87346-2	MW-10	Total/NA	Water	7470A	
280-87346-3	MW-11	Total/NA	Water	7470A	
280-87346-4	MW-12	Total/NA	Water	7470A	
280-87346-5	MW-12D	Total/NA	Water	7470A	
MB 280-341661/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-341661/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 342240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	7470A	341661
280-87346-2	MW-10	Total/NA	Water	7470A	341661
280-87346-3	MW-11	Total/NA	Water	7470A	341661
280-87346-4	MW-12	Total/NA	Water	7470A	341661
280-87346-5	MW-12D	Total/NA	Water	7470A	341661
MB 280-341661/1-A	Method Blank	Total/NA	Water	7470A	341661
LCS 280-341661/2-A	Lab Control Sample	Total/NA	Water	7470A	341661

General Chemistry

Analysis Batch: 339765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	9040B	
280-87346-2	MW-10	Total/NA	Water	9040B	
280-87346-3	MW-11	Total/NA	Water	9040B	
280-87346-4	MW-12	Total/NA	Water	9040B	
280-87346-5	MW-12D	Total/NA	Water	9040B	
LCS 280-339765/50	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 339774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	SM 2540C	
280-87346-2	MW-10	Total/NA	Water	SM 2540C	
280-87346-3	MW-11	Total/NA	Water	SM 2540C	
280-87346-4	MW-12	Total/NA	Water	SM 2540C	
280-87346-5	MW-12D	Total/NA	Water	SM 2540C	
MB 280-339774/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-339774/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-339774/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 340316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	SM 2540D	
MB 280-340316/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-340316/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 340319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-2	MW-10	Total/NA	Water	SM 2540D	
280-87346-3	MW-11	Total/NA	Water	SM 2540D	
280-87346-4	MW-12	Total/NA	Water	SM 2540D	
280-87346-5	MW-12D	Total/NA	Water	SM 2540D	
MB 280-340319/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-340319/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-87346-2 DU	MW-10	Total/NA	Water	SM 2540D	

Analysis Batch: 341862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	9056A	
280-87346-1	MW-9	Total/NA	Water	9056A	
280-87346-2	MW-10	Total/NA	Water	9056A	
280-87346-2	MW-10	Total/NA	Water	9056A	
280-87346-3	MW-11	Total/NA	Water	9056A	
280-87346-3	MW-11	Total/NA	Water	9056A	
280-87346-4	MW-12	Total/NA	Water	9056A	
280-87346-5	MW-12D	Total/NA	Water	9056A	
MB 280-341862/6	Method Blank	Total/NA	Water	9056A	
LCS 280-341862/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-341862/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-341862/3	Lab Control Sample	Total/NA	Water	9056A	

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Rad

Prep Batch: 267591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	PrecSep-21	
280-87346-2	MW-10	Total/NA	Water	PrecSep-21	
280-87346-3	MW-11	Total/NA	Water	PrecSep-21	
280-87346-4	MW-12	Total/NA	Water	PrecSep-21	
280-87346-5	MW-12D	Total/NA	Water	PrecSep-21	
MB 160-267591/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-267591/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 267594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87346-1	MW-9	Total/NA	Water	PrecSep_0	
280-87346-2	MW-10	Total/NA	Water	PrecSep_0	
280-87346-3	MW-11	Total/NA	Water	PrecSep_0	
280-87346-4	MW-12	Total/NA	Water	PrecSep_0	
280-87346-5	MW-12D	Total/NA	Water	PrecSep_0	
MB 160-267594/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-267594/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-9

Date Collected: 08/25/16 14:20
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245525	09/03/16 04:32	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		100			245905	09/07/16 13:39	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341661	09/14/16 11:25	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342240	09/14/16 17:38	CDH	TAL DEN
Total/NA	Analysis	9040B		1			339765	08/26/16 14:48	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	341862	09/13/16 22:49	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	341862	09/13/16 23:06	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339774	08/26/16 16:09	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340316	08/31/16 11:54	CML	TAL DEN
Total/NA	Prep	PrecSep-21			500.67 mL	1.0 g	267591	08/31/16 17:03	MCJ	TAL SL
Total/NA	Analysis	9315		1			271151	09/22/16 07:27	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.67 mL	1.0 g	267594	08/31/16 18:45	MCJ	TAL SL
Total/NA	Analysis	9320		1			269970	09/15/16 13:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 08/25/16 12:50
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245525	09/03/16 04:36	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		200			245905	09/07/16 13:55	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341661	09/14/16 11:25	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342240	09/14/16 17:41	CDH	TAL DEN
Total/NA	Analysis	9040B		1			339765	08/26/16 14:53	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	341862	09/13/16 23:24	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	341862	09/13/16 23:42	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339774	08/26/16 16:09	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340319	08/31/16 11:57	CML	TAL DEN
Total/NA	Prep	PrecSep-21			999.53 mL	1.0 g	267591	08/31/16 17:03	MCJ	TAL SL
Total/NA	Analysis	9315		1			271151	09/22/16 07:27	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.53 mL	1.0 g	267594	08/31/16 18:45	MCJ	TAL SL
Total/NA	Analysis	9320		1			269970	09/15/16 13:35	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Client Sample ID: MW-11

Date Collected: 08/25/16 10:00
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245525	09/03/16 04:48	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		50			245905	09/07/16 14:00	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341661	09/14/16 11:25	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342240	09/14/16 17:43	CDH	TAL DEN
Total/NA	Analysis	9040B		1			339765	08/26/16 14:58	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	341862	09/13/16 23:59	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	341862	09/14/16 00:17	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339774	08/26/16 16:09	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340319	08/31/16 11:57	CML	TAL DEN
Total/NA	Prep	PrecSep-21			999.05 mL	1.0 g	267591	08/31/16 17:03	MCJ	TAL SL
Total/NA	Analysis	9315		1			271151	09/22/16 07:27	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.05 mL	1.0 g	267594	08/31/16 18:45	MCJ	TAL SL
Total/NA	Analysis	9320		1			269970	09/15/16 13:35	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245525	09/03/16 04:53	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		50			245905	09/07/16 14:04	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341661	09/14/16 11:25	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342240	09/14/16 17:45	CDH	TAL DEN
Total/NA	Analysis	9040B		1			339765	08/26/16 15:04	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	341862	09/14/16 00:35	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339774	08/26/16 16:09	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340319	08/31/16 11:57	CML	TAL DEN
Total/NA	Prep	PrecSep-21			1000.34 mL	1.0 g	267591	08/31/16 17:06	MCJ	TAL SL
Total/NA	Analysis	9315		1			271151	09/22/16 07:27	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.34 mL	1.0 g	267594	08/31/16 18:45	MCJ	TAL SL
Total/NA	Analysis	9320		1			269970	09/15/16 13:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Client Sample ID: MW-12D

Date Collected: 08/25/16 11:30
Date Received: 08/25/16 15:40

Lab Sample ID: 280-87346-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245525	09/03/16 04:57	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245011	08/31/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		50			245905	09/07/16 14:08	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341661	09/14/16 11:25	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342240	09/14/16 17:47	CDH	TAL DEN
Total/NA	Analysis	9040B		1			339765	08/26/16 15:09	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	341862	09/14/16 01:10	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339774	08/26/16 16:09	RSM	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340319	08/31/16 11:57	CML	TAL DEN
Total/NA	Prep	PrecSep-21			999.79 mL	1.0 g	267591	08/31/16 17:06	MCJ	TAL SL
Total/NA	Analysis	9315		1			271151	09/22/16 07:27	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.79 mL	1.0 g	267594	08/31/16 18:45	MCJ	TAL SL
Total/NA	Analysis	9320		1			269970	09/15/16 13:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-16 *
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-17
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: HDR Inc				Job #:

Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:
City: Englewood	TAT Requested (days): Standard
State, Zip: CO, 80112	
Phone: 720-633-2380(Tel)	PO #: DEN-001
Email: anna.lundin@hdrinc.com	WO #:
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379
Site: Colorado	SSOW#:

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)		Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids		9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		N	N	D			
~~Field Duplicate~~ MW-9	8/25/16	1420	G	Water		N	1	2	1		1	2		7	
~~Equipment Blank~~ MW-10	8/25/16	1250	G	Water		N	1	2	1		1	2		7	
MW-11	8/25/16	1000	G	water		N	1	2	1		1	2		7	
MW-12	8/25/16	1130	G	water		N	1	2	1		1	2		7	
MW-12D	8/25/16	1130	G	water		N	1	2	1		1	2		7	

280-87346 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	8/25/16 1540		[signature]	8/25/16 1540	TAD
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.4, 5.4, 0.0 IR#s transferred by JT 8/25/16

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-87346 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stepha...	COC No: 280-365580.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		**Analysis Requested**	Job #: 280-87346-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 9/23/2016		Preservation Codes:
City: Earth City	TAT Requested (days):		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		Other:
Email:	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Xcel Energy CCR - Valmont Station	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9320_Ra228/PrecSep_0 Radium-228 (2/3)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-9 (280-87346-1)	8/25/16	14:20 Mountain		Water			X	X	X	2	
MW-10 (280-87346-2)	8/25/16	12:50 Mountain		Water			X	X	X	2	
MW-11 (280-87346-3)	8/25/16	10:00 Mountain		Water			X	X	X	2	
MW-12 (280-87346-4)	8/25/16	11:30 Mountain		Water			X	X	X	2	
MW-12D (280-87346-5)	8/25/16	11:30 Mountain		Water			X	X	X	2	

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Ron Stoll	Date/Time: 8/26/16 15:10	Company: TAL	Received by: Gil Clark
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Received by: Gil Clark	Date/Time: 8.27.16 0845	Company: TASR			
Received by:	Date/Time:	Company			
Received by:	Date/Time:	Company			

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

9/23/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

24.9 (25.9

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-365577.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-87346-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 9/20/2016			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

558

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-9 (280-87346-1)	8/25/16	14:20 Mountain		Water			X	1	Use Collision Cell
MW-10 (280-87346-2)	8/25/16	12:50 Mountain		Water			X	1	Use Collision Cell
MW-11 (280-87346-3)	8/25/16	10:00 Mountain		Water			X	1	Use Collision Cell
MW-12 (280-87346-4)	8/25/16	11:30 Mountain		Water			X	1	Use Collision Cell
MW-12D (280-87346-5)	8/25/16	11:30 Mountain		Water			X	1	Use Collision Cell

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 8/26/16 15:10	Company: TAL	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

9/23/2016

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____

Canton Facility

Client TA Denver Site Name _____ Cooler unpacked by: B Murphy

Cooler Received on 8/30/16 Opened on 8/30/16

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN #36 (CF +1.0°C) Observed Cooler Temp. 2.9 °C Corrected Cooler Temp. 3.9 °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 11-15 have been checked at the originating laboratory.		
11. Were sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC574756
12. Were VOAs on the COC?	Yes	No
13. Were air bubbles >6 mm in any VOA vials?	Yes	No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
15. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-87346-1

Login Number: 87346
List Number: 1
Creator: True, Joshua A

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	N/A	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-87346-1

Login Number: 87346
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/27/16 09:52 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87346-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-87346-1	MW-9	76.4
280-87346-2	MW-10	76.1
280-87346-3	MW-11	77.2
280-87346-4	MW-12	76.1
280-87346-5	MW-12D	61.0
LCS 160-267591/2-A	Lab Control Sample	84.3
MB 160-267591/1-A	Method Blank	93.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-87346-1	MW-9	76.4	90.5
280-87346-2	MW-10	76.1	90.1
280-87346-3	MW-11	77.2	92.3
280-87346-4	MW-12	76.1	89.3
280-87346-5	MW-12D	61.0	94.2
LCS 160-267594/2-A	Lab Control Sample	84.3	89.3
MB 160-267594/1-A	Method Blank	93.2	90.1

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-87511-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Stephanie Rothmeyer

Authorized for release by:
10/4/2016 10:52:17 AM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

LINKS

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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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
H	Sample was prepped or analyzed beyond the specified holding time

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-87511-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-87511-1

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.

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.

RECEIPT

The samples were received on 8/30/2016 at 4:04 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.9º C and 5.1º C.

The container label on the Plastic 250 mL Unpreserved container for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-4EB. The container labels list a Sample ID Equipment Blank, while the COC lists MW-4EB. It can be noted that all other containers for this sample have Equipment Blank crossed out on the label and corrected with MW-4EB. The sample was logged per the COC.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 09/02/2016 and analyzed on 09/06/2016 and 09/07/2016.

Barium, Calcium and Boron were detected in method blank MB 240-245342/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium failed the recovery criteria low for the MSD of sample 240-68968-1 in batch 240-245604. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Samples MW-1P (280-87511-1)[10X], MW-1 (280-87511-2)[5X], MW-3 (280-87511-3)[20X], MW-3 (280-87511-3)[5X], MW-4 (280-87511-4)[10X], MW-6 (280-87511-5)[5X], MW-7 (280-87511-6)[5X] and MW-8 (280-87511-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 09/15/2016.

Mercury failed the recovery criteria low for the MS and MSD of sample 280-87815-1 in batch 280-342471. Mercury exceeded the RPD limit. Refer to the QC report for details.

Job ID: 280-87511-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

TOTAL DISSOLVED SOLIDS
Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 09/01/2016, 09/06/2016 and 09/07/2016.

Reanalysis of the following samples was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis: MW-4 (280-87511-4), MW-8 (280-87511-7).

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

TOTAL SUSPENDED SOLIDS
Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 09/06/2016.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample MW-1P (280-87511-1). Sample non-homogeneity is suspected.

The following samples were received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less: MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-4EB (280-87511-8). As such, the laboratory had insufficient time remaining to perform the analysis within holding time.

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

CORROSIVITY (PH)
Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 08/31/2016 and 09/08/2016.

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

ANIONS (28 DAYS)
Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 09/14/2016.

Samples MW-1 (280-87511-2)[5X], MW-3 (280-87511-3)[20X], MW-4 (280-87511-4)[2X], MW-4 (280-87511-4)[50X], MW-6 (280-87511-5)[10X] and MW-8 (280-87511-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 09/09/2016 and 09/11/2016 and analyzed on 10/02/2016 and 10/03/2016.

The following samples were run at reduced aliquot due to sediment in the sample: MW-1 (280-87511-2), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6).

The following samples were run at reduced aliquot due to limited volume: MW-1P (280-87511-1), MW-3 (280-87511-3).

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

Job ID: 280-87511-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

RADIUM-228

Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 09/09/2016 and 09/11/2016 and analyzed on 09/20/2016 and 09/23/2016.

The following samples were prepared at a reduced aliquot due to sediment: MW-1 (280-87511-2), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6).

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1P (280-87511-1), MW-3 (280-87511-3), MW-4 (280-87511-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. The samples were also prepared at a reduced aliquot due to limited volume.

The radium-228 detection goal was not met for the following sample due to the reduced sample volume attributed to the presence of matrix interferences and limited volume available for analysis: MW-1 (280-87511-2). In addition, the affected sample has lower barium carrier recoveries which contributed to an elevated MDC. 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.

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-1P (280-87511-1), MW-1 (280-87511-2), MW-3 (280-87511-3), MW-4 (280-87511-4), MW-6 (280-87511-5), MW-7 (280-87511-6), MW-8 (280-87511-7) and MW-4EB (280-87511-8) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 10/04/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Client Sample ID: MW-1P — Lab Sample ID: 280-87511-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0011	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0076		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.33	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	93	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0053		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0067		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.018		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0021		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0010	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	1.0	B	0.20	0.025	mg/L	10		6020A	Total Recoverable
Lithium	0.0073	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	76		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	1.1		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	64		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	500		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-87511-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0015	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0043	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.17	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Beryllium	0.00058	J	0.0010	0.00040	mg/L	1		6020A	Total Recoverable
Calcium	94	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0053		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.029		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.060		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0081		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0029	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	0.46	B	0.10	0.013	mg/L	5		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1 (Continued) — Lab Sample ID: 280-87511-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.049		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
Mercury	0.027	J	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	66		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.56		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	320		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	890		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	360		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-87511-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00087	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.012	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	530	B	5.0	0.22	mg/L	5		6020A	Total Recoverable
Cobalt	0.00075	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00072	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0011	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00017	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00076	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	1.4	B	0.40	0.050	mg/L	20		6020A	Total Recoverable
Lithium	0.060		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.088	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2300		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3900		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	26		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-87511-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00043	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.019		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.034	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	430	B	1.0	0.043	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Client Sample ID: MW-4 (Continued) — Lab Sample ID: 280-87511-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0037		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0079		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.020		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0023		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.23		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	0.94	B	0.20	0.025	mg/L	10		6020A	Total Recoverable
Lithium	0.19		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	530		150	13	mg/L	50		9056A	Total/NA
Fluoride	3.8		1.0	0.12	mg/L	2		9056A	Total/NA
Sulfate	5700		250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9000	H	100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	74	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-87511-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0025	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.046	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	320	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00091	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0047		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0020	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0022		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.018		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	0.37	B	0.10	0.013	mg/L	5		6020A	Total Recoverable
Lithium	0.054		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	400		30	2.5	mg/L	10		9056A	Total/NA
Fluoride	0.13	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	720		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2000		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	62	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 280-87511-6

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-87511-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0011	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.00079	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.029	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	41	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00048	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0059		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0052	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0013		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0016	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	0.52	B	0.10	0.013	mg/L	5		6020A	Total Recoverable
Lithium	0.047		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	49		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.41	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	150		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	730		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	25	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-87511-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0017	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.013	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	480	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00035	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0051		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00059	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00042	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Boron	0.66	B	0.20	0.025	mg/L	10		6020A	Total Recoverable
Lithium	0.092		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120		3.0	0.25	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-8 (Continued) — Lab Sample ID: 280-87511-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.080	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2500		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3900	H	40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	22		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4EB — Lab Sample ID: 280-87511-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.00054	J B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	0.18	J B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Chromium	0.00042	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Boron	0.010	J B	0.020	0.0025	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	6.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Sulfate	1.1	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	39		10	4.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-87511-1	MW-1P	Water	08/30/16 15:05	08/30/16 16:04
280-87511-2	MW-1	Water	08/30/16 12:00	08/30/16 16:04
280-87511-3	MW-3	Water	08/30/16 13:30	08/30/16 16:04
280-87511-4	MW-4	Water	08/29/16 10:30	08/30/16 16:04
280-87511-5	MW-6	Water	08/29/16 15:25	08/30/16 16:04
280-87511-6	MW-7	Water	08/29/16 13:50	08/30/16 16:04
280-87511-7	MW-8	Water	08/30/16 10:40	08/30/16 16:04
280-87511-8	MW-4EB	Water	08/29/16 11:15	08/30/16 16:04

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0011**	**J**	0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:19	1
Arsenic	**0.0076**		0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:19	1
Barium	**0.33**	**B**	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:19	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:19	1
Calcium	**93**	**B**	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:19	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:19	1
Cobalt	**0.0053**		0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:19	1
Chromium	**0.0067**		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:19	1
Molybdenum	**0.018**		0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:19	1
Lead	**0.0021**		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:19	1
Selenium	**0.0010**	**J**	0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:19	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:19	1
Boron	**1.0**	**B**	0.20	0.025	mg/L		09/02/16 14:00	09/07/16 14:20	10
Lithium	**0.0073**	**J**	0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:19	1

Client Sample ID: MW-1
Date Collected: 08/30/16 12:00
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0015**	**J**	0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:23	1
Arsenic	**0.0043**	**J**	0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:23	1
Barium	**0.17**	**B**	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:23	1
Beryllium	**0.00058**	**J**	0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:23	1
Calcium	**94**	**B**	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:23	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:23	1
Cobalt	**0.0053**		0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:23	1
Chromium	**0.029**		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:23	1
Molybdenum	**0.060**		0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:23	1
Lead	**0.0081**		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:23	1
Selenium	**0.0029**	**J**	0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:23	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:23	1
Boron	**0.46**	**B**	0.10	0.013	mg/L		09/02/16 14:00	09/07/16 14:24	5
Lithium	**0.049**		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:23	1

Client Sample ID: MW-3
Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:28	1
Arsenic	**0.00087**	**J**	0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:28	1
Barium	**0.012**	**B**	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:28	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:28	1
Calcium	**530**	**B**	5.0	0.22	mg/L		09/02/16 14:00	09/06/16 11:00	5
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:28	1
Cobalt	**0.00075**	**J**	0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:28	1
Chromium	**0.00072**	**J**	0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:28	1
Molybdenum	**0.0011**	**J**	0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:28	1
Lead	**0.00017**	**J**	0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:28	1
Selenium	**0.00076**	**J**	0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:28	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:28	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-3
Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4	B	0.40	0.050	mg/L		09/02/16 14:00	09/07/16 14:29	20
Lithium	0.060		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:28	1

Client Sample ID: MW-4
Date Collected: 08/29/16 10:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00043	J	0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:32	1
Arsenic	0.019		0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:32	1
Barium	0.034	B	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:32	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:32	1
Calcium	430	B	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:32	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:32	1
Cobalt	0.0037		0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:32	1
Chromium	0.0079		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:32	1
Molybdenum	0.020		0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:32	1
Lead	0.0023		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:32	1
Selenium	0.23		0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:32	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:32	1
Boron	0.94	B	0.20	0.025	mg/L		09/02/16 14:00	09/07/16 14:45	10
Lithium	0.19		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:32	1

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:36	1
Arsenic	0.0025	J	0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:36	1
Barium	0.046	B	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:36	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:36	1
Calcium	320	B	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:36	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:36	1
Cobalt	0.00091	J	0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:36	1
Chromium	0.0047		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:36	1
Molybdenum	0.0020	J	0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:36	1
Lead	0.0022		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:36	1
Selenium	0.018		0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:36	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:36	1
Boron	0.37	B	0.10	0.013	mg/L		09/02/16 14:00	09/07/16 14:49	5
Lithium	0.054		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:36	1

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0011	J	0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:40	1
Arsenic	0.00079	J	0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:40	1
Barium	0.029	B	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:40	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:40	1
Calcium	41	B	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:40	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:40	1
Cobalt	**0.00048**	**J**	0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:40	1
Chromium	**0.0059**		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:40	1
Molybdenum	**0.0052**	**J**	0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:40	1
Lead	**0.0013**		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:40	1
Selenium	**0.0016**	**J**	0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:40	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:40	1
Boron	**0.52**	**B**	0.10	0.013	mg/L		09/02/16 14:00	09/07/16 14:54	5
Lithium	**0.047**		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:40	1

Client Sample ID: MW-8
Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:44	1
Arsenic	**0.0017**	**J**	0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:44	1
Barium	**0.013**	**B**	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:44	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:44	1
Calcium	**480**	**B**	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:44	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:44	1
Cobalt	**0.00035**	**J**	0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:44	1
Chromium	**0.0051**		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:44	1
Molybdenum	**0.00059**	**J**	0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:44	1
Lead	**0.00042**	**J**	0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:44	1
Selenium	**0.011**		0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:44	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:44	1
Boron	**0.66**	**B**	0.20	0.025	mg/L		09/02/16 14:00	09/07/16 14:58	10
Lithium	**0.092**		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:44	1

Client Sample ID: MW-4EB
Date Collected: 08/29/16 11:15
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 10:48	1
Arsenic	ND		0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 10:48	1
Barium	**0.00054**	**J B**	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 10:48	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 10:48	1
Calcium	**0.18**	**J B**	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 10:48	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 10:48	1
Cobalt	ND		0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 10:48	1
Chromium	**0.00042**	**J**	0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 10:48	1
Molybdenum	ND		0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 10:48	1
Lead	ND		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 10:48	1
Selenium	ND		0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 10:48	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 10:48	1
Boron	**0.010**	**J B**	0.020	0.0025	mg/L		09/02/16 14:00	09/07/16 15:02	1
Lithium	ND		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 10:48	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:19	1

Client Sample ID: MW-1
Date Collected: 08/30/16 12:00
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.027**	**J**	0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:26	1

Client Sample ID: MW-3
Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:28	1

Client Sample ID: MW-4
Date Collected: 08/29/16 10:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:31	1

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:33	1

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:35	1

Client Sample ID: MW-8
Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:37	1

Client Sample ID: MW-4EB
Date Collected: 08/29/16 11:15
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:40	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.6**	**HF**	0.1	0.1	SU			08/31/16 14:59	1

General Chemistry (Continued)

Client Sample ID: MW-1P
Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	22.3	HF	1.0	1.0	Degrees C			08/31/16 14:59	1
Chloride	76		3.0	0.25	mg/L			09/14/16 13:46	1
Fluoride	1.1		0.50	0.060	mg/L			09/14/16 13:46	1
Sulfate	64		5.0	0.23	mg/L			09/14/16 13:46	1
Total Dissolved Solids (TDS)	500		10	4.7	mg/L			09/06/16 10:02	1
Total Suspended Solids	4.0		4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-1
Date Collected: 08/30/16 12:00
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			08/31/16 15:04	1
Temperature	22.2	HF	1.0	1.0	Degrees C			08/31/16 15:04	1
Chloride	66		3.0	0.25	mg/L			09/14/16 14:57	1
Fluoride	0.56		0.50	0.060	mg/L			09/14/16 14:57	1
Sulfate	320		25	1.2	mg/L			09/14/16 22:06	5
Total Dissolved Solids (TDS)	890		10	4.7	mg/L			09/06/16 10:02	1
Total Suspended Solids	360		4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-3
Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU			08/31/16 15:09	1
Temperature	22.1	HF	1.0	1.0	Degrees C			08/31/16 15:09	1
Chloride	43		3.0	0.25	mg/L			09/14/16 15:15	1
Fluoride	0.088	J	0.50	0.060	mg/L			09/14/16 15:15	1
Sulfate	2300		100	4.6	mg/L			09/14/16 22:24	20
Total Dissolved Solids (TDS)	3900		20	9.4	mg/L			09/06/16 10:02	1
Total Suspended Solids	26		4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-4
Date Collected: 08/29/16 10:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			08/31/16 15:14	1
Temperature	22.1	HF	1.0	1.0	Degrees C			08/31/16 15:14	1
Chloride	530		150	13	mg/L			09/14/16 22:42	50
Fluoride	3.8		1.0	0.12	mg/L			09/14/16 15:32	2
Sulfate	5700		250	12	mg/L			09/14/16 22:42	50
Total Dissolved Solids (TDS)	9000	H	100	47	mg/L			09/06/16 10:02	1
Total Suspended Solids	74	H	4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			08/31/16 15:19	1
Temperature	22.3	HF	1.0	1.0	Degrees C			08/31/16 15:19	1
Chloride	400		30	2.5	mg/L			09/14/16 22:59	10

General Chemistry (Continued)

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.13	J	0.50	0.060	mg/L			09/14/16 15:50	1
Sulfate	720		50	2.3	mg/L			09/14/16 22:59	10
Total Dissolved Solids (TDS)	2000		20	9.4	mg/L			09/01/16 13:30	1
Total Suspended Solids	62	H	4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			08/31/16 15:33	1
Temperature	22.8	HF	1.0	1.0	Degrees C			08/31/16 15:33	1
Chloride	49		3.0	0.25	mg/L			09/14/16 16:44	1
Fluoride	0.41	J	0.50	0.060	mg/L			09/14/16 16:44	1
Sulfate	150		5.0	0.23	mg/L			09/14/16 16:44	1
Total Dissolved Solids (TDS)	730		10	4.7	mg/L			09/01/16 13:30	1
Total Suspended Solids	25	H	4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-8
Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			08/31/16 15:38	1
Temperature	22.7	HF	1.0	1.0	Degrees C			08/31/16 15:38	1
Chloride	120		3.0	0.25	mg/L			09/14/16 17:01	1
Fluoride	0.080	J	0.50	0.060	mg/L			09/14/16 17:01	1
Sulfate	2500		100	4.6	mg/L			09/14/16 23:17	20
Total Dissolved Solids (TDS)	3900	H	40	19	mg/L			09/07/16 13:25	1
Total Suspended Solids	22		4.0	1.1	mg/L			09/06/16 14:35	1

Client Sample ID: MW-4EB
Date Collected: 08/29/16 11:15
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	6.3	HF	0.1	0.1	SU			09/08/16 16:27	1
Temperature	23.1	HF	1.0	1.0	Degrees C			09/08/16 16:27	1
Chloride	ND		3.0	0.25	mg/L			09/14/16 17:19	1
Fluoride	ND		0.50	0.060	mg/L			09/14/16 17:19	1
Sulfate	1.1	J	5.0	0.23	mg/L			09/14/16 17:19	1
Total Dissolved Solids (TDS)	39		10	4.7	mg/L			09/01/16 13:30	1
Total Suspended Solids	ND	H	4.0	1.1	mg/L			09/06/16 14:35	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0523	U	0.0980	0.0982	1.00	0.170	pCi/L	09/11/16 19:46	10/03/16 10:59	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	75.2		40 - 110	09/11/16 19:46	10/03/16 10:59	1

Client Sample ID: MW-1
Date Collected: 08/30/16 12:00
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.989		0.317	0.329	1.00	0.359	pCi/L	09/11/16 19:46	10/03/16 10:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	46.7		40 - 110	09/11/16 19:46	10/03/16 10:59	1

Client Sample ID: MW-3
Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.684		0.149	0.161	1.00	0.115	pCi/L	09/11/16 19:46	10/03/16 10:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		40 - 110	09/11/16 19:46	10/03/16 10:59	1

Client Sample ID: MW-4
Date Collected: 08/29/16 10:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.533		0.179	0.185	1.00	0.201	pCi/L	09/11/16 19:46	10/03/16 10:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110	09/11/16 19:46	10/03/16 10:59	1

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.463		0.149	0.155	1.00	0.172	pCi/L	09/09/16 16:43	10/02/16 20:45	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		40 - 110	09/09/16 16:43	10/02/16 20:45	1

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.300		0.128	0.130	1.00	0.162	pCi/L	09/09/16 16:43	10/02/16 20:46	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110	09/09/16 16:43	10/02/16 20:46	1

Client Sample ID: MW-8
Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.467		0.0928	0.102	1.00	0.0821	pCi/L	09/09/16 16:43	10/02/16 20:46	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110	09/09/16 16:43	10/02/16 20:46	1

Client Sample ID: MW-4EB
Date Collected: 08/29/16 11:15
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0211	U	0.0371	0.0371	1.00	0.0647	pCi/L	09/09/16 16:43	10/02/16 20:46	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	09/09/16 16:43	10/02/16 20:46	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.412	U	0.428	0.429	1.00	0.698	pCi/L	09/11/16 20:40	09/23/16 17:12	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	75.2		40 - 110	09/11/16 20:40	09/23/16 17:12	1
Y Carrier	89.0		40 - 110	09/11/16 20:40	09/23/16 17:12	1

Client Sample ID: MW-1
Date Collected: 08/30/16 12:00
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.540	U G	1.02	1.02	1.00	1.73	pCi/L	09/11/16 20:40	09/23/16 17:12	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	46.7		40 - 110	09/11/16 20:40	09/23/16 17:12	1
Y Carrier	86.4		40 - 110	09/11/16 20:40	09/23/16 17:12	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-3
Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.11		0.385	0.398	1.00	0.509	pCi/L	09/11/16 20:40	09/23/16 17:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*09/11/16 20:40*	*09/23/16 17:12*	*1*
Y Carrier	*86.7*		*40 - 110*	*09/11/16 20:40*	*09/23/16 17:12*	*1*

Client Sample ID: MW-4
Date Collected: 08/29/16 10:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.422	U	0.545	0.546	1.00	0.904	pCi/L	09/11/16 20:40	09/23/16 17:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*09/11/16 20:40*	*09/23/16 17:12*	*1*
Y Carrier	*84.9*		*40 - 110*	*09/11/16 20:40*	*09/23/16 17:12*	*1*

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.524	U	0.528	0.530	1.00	0.857	pCi/L	09/09/16 17:18	09/20/16 17:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*09/09/16 17:18*	*09/20/16 17:38*	*1*
Y Carrier	*81.9*		*40 - 110*	*09/09/16 17:18*	*09/20/16 17:38*	*1*

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.583	U	0.509	0.512	1.00	0.815	pCi/L	09/09/16 17:18	09/20/16 17:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.7*		*40 - 110*	*09/09/16 17:18*	*09/20/16 17:38*	*1*
Y Carrier	*88.2*		*40 - 110*	*09/09/16 17:18*	*09/20/16 17:38*	*1*

Client Sample ID: MW-8
Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.803		0.279	0.289	1.00	0.373	pCi/L	09/09/16 17:18	09/20/16 17:38	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110	09/09/16 17:18	09/20/16 17:38	1
Y Carrier	83.4		40 - 110	09/09/16 17:18	09/20/16 17:38	1

Client Sample ID: MW-4EB — **Lab Sample ID: 280-87511-8**
Date Collected: 08/29/16 11:15 — **Matrix: Water**
Date Received: 08/30/16 16:04

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.138	U	0.263	0.264	1.00	0.447	pCi/L	09/09/16 17:18	09/20/16 17:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	09/09/16 17:18	09/20/16 17:39	1
Y Carrier	82.6		40 - 110	09/09/16 17:18	09/20/16 17:39	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P — **Lab Sample ID: 280-87511-1**
Date Collected: 08/30/16 15:05 — **Matrix: Water**
Date Received: 08/30/16 16:04

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.465	U	0.439	0.440	5.00	0.698	pCi/L		10/04/16 02:28	1

Client Sample ID: MW-1 — **Lab Sample ID: 280-87511-2**
Date Collected: 08/30/16 12:00 — **Matrix: Water**
Date Received: 08/30/16 16:04

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.53	U	1.07	1.07	5.00	1.73	pCi/L		10/04/16 02:28	1

Client Sample ID: MW-3 — **Lab Sample ID: 280-87511-3**
Date Collected: 08/30/16 13:30 — **Matrix: Water**
Date Received: 08/30/16 16:04

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.80**		0.413	0.429	5.00	0.509	pCi/L		10/04/16 02:28	1

Client Sample ID: MW-4 — **Lab Sample ID: 280-87511-4**
Date Collected: 08/29/16 10:30 — **Matrix: Water**
Date Received: 08/30/16 16:04

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.954**		0.573	0.577	5.00	0.904	pCi/L		10/04/16 02:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-6
Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.987		0.548	0.552	5.00	0.857	pCi/L		10/04/16 02:28	1

Client Sample ID: MW-7
Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.883		0.525	0.528	5.00	0.815	pCi/L		10/04/16 02:28	1

Client Sample ID: MW-8
Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.27		0.294	0.306	5.00	0.373	pCi/L		10/04/16 02:28	1

Client Sample ID: MW-4EB
Date Collected: 08/29/16 11:15
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.159	U	0.266	0.266	5.00	0.447	pCi/L		10/04/16 02:28	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-245342/1-A
Matrix: Water
Analysis Batch: 245604

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 245342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		09/02/16 14:00	09/06/16 09:23	1
Arsenic	ND		0.0050	0.00035	mg/L		09/02/16 14:00	09/06/16 09:23	1
Barium	0.000993	J	0.0050	0.00052	mg/L		09/02/16 14:00	09/06/16 09:23	1
Beryllium	ND		0.0010	0.00040	mg/L		09/02/16 14:00	09/06/16 09:23	1
Calcium	0.249	J	1.0	0.043	mg/L		09/02/16 14:00	09/06/16 09:23	1
Cadmium	ND		0.0010	0.00031	mg/L		09/02/16 14:00	09/06/16 09:23	1
Cobalt	ND		0.0010	0.00013	mg/L		09/02/16 14:00	09/06/16 09:23	1
Chromium	ND		0.0020	0.00026	mg/L		09/02/16 14:00	09/06/16 09:23	1
Molybdenum	ND		0.010	0.00051	mg/L		09/02/16 14:00	09/06/16 09:23	1
Lead	ND		0.0010	0.00016	mg/L		09/02/16 14:00	09/06/16 09:23	1
Selenium	ND		0.0050	0.00048	mg/L		09/02/16 14:00	09/06/16 09:23	1
Thallium	ND		0.0010	0.00028	mg/L		09/02/16 14:00	09/06/16 09:23	1
Lithium	ND		0.0080	0.00016	mg/L		09/02/16 14:00	09/06/16 09:23	1

Lab Sample ID: MB 240-245342/1-A
Matrix: Water
Analysis Batch: 245905

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 245342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0106	J	0.020	0.0025	mg/L		09/02/16 14:00	09/07/16 14:12	1

Lab Sample ID: LCS 240-245342/2-A
Matrix: Water
Analysis Batch: 245604

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 245342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.104		mg/L		104	80 - 120
Arsenic	1.00	1.00		mg/L		100	80 - 120
Barium	1.00	1.06		mg/L		106	80 - 120
Beryllium	1.00	1.01		mg/L		101	80 - 120
Calcium	10.0	10.7		mg/L		107	80 - 120
Cadmium	1.00	1.03		mg/L		103	80 - 120
Cobalt	1.00	1.07		mg/L		107	80 - 120
Chromium	1.00	1.04		mg/L		104	80 - 120
Molybdenum	0.100	0.100		mg/L		100	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120
Selenium	1.00	1.01		mg/L		101	80 - 120
Thallium	0.250	0.254		mg/L		102	80 - 120
Lithium	0.100	0.102		mg/L		102	80 - 120

Lab Sample ID: LCS 240-245342/2-A
Matrix: Water
Analysis Batch: 245905

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 245342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.100	0.104		mg/L		104	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-341966/1-A
Matrix: Water
Analysis Batch: 342471

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 341966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		09/15/16 11:50	09/15/16 16:06	1

Lab Sample ID: LCS 280-341966/2-A
Matrix: Water
Analysis Batch: 342471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 341966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.79		ug/L		96	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-340419/29
Matrix: Water
Analysis Batch: 340419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-340419/4
Matrix: Water
Analysis Batch: 340419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-341467/4
Matrix: Water
Analysis Batch: 341467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-342051/6
Matrix: Water
Analysis Batch: 342051

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			09/14/16 10:54	1
Fluoride	ND		0.50	0.060	mg/L			09/14/16 10:54	1
Sulfate	ND		5.0	0.23	mg/L			09/14/16 10:54	1

Lab Sample ID: LCS 280-342051/4
Matrix: Water
Analysis Batch: 342051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.7		mg/L		100	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-342051/4
Matrix: Water
Analysis Batch: 342051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.00	5.21		mg/L		104	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-342051/5
Matrix: Water
Analysis Batch: 342051

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.6		mg/L		100	90 - 110	0	10
Fluoride	5.00	5.21		mg/L		104	90 - 110	0	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-342051/3
Matrix: Water
Analysis Batch: 342051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.57	J	mg/L		103	50 - 150
Fluoride	0.200	0.188	J	mg/L		94	50 - 150
Sulfate	2.50	2.50	J	mg/L		100	50 - 150

Lab Sample ID: 280-87511-1 MS
Matrix: Water
Analysis Batch: 342051

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	76		25.0	101		mg/L		100	80 - 120
Fluoride	1.1		5.00	6.00		mg/L		99	80 - 120
Sulfate	64		25.0	89.4		mg/L		100	80 - 120

Lab Sample ID: 280-87511-1 MSD
Matrix: Water
Analysis Batch: 342051

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	76		25.0	101		mg/L		101	80 - 120	0	20
Fluoride	1.1		5.00	6.01		mg/L		99	80 - 120	0	20
Sulfate	64		25.0	89.4		mg/L		100	80 - 120	0	20

Lab Sample ID: 280-87511-1 DU
Matrix: Water
Analysis Batch: 342051

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	76		76.0		mg/L		0.09	15
Fluoride	1.1		1.08		mg/L		0.1	15
Sulfate	64		64.2		mg/L		0.2	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-340507/1
Matrix: Water
Analysis Batch: 340507

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			09/01/16 13:30	1

Lab Sample ID: LCS 280-340507/2
Matrix: Water
Analysis Batch: 340507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	486		mg/L		97	86 - 110

Lab Sample ID: 280-87511-6 DU
Matrix: Water
Analysis Batch: 340507

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	730		720		mg/L		0.7	10

Lab Sample ID: MB 280-340886/1
Matrix: Water
Analysis Batch: 340886

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			09/06/16 10:02	1

Lab Sample ID: LCS 280-340886/2
Matrix: Water
Analysis Batch: 340886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	488		mg/L		98	86 - 110

Lab Sample ID: MB 280-341143/1
Matrix: Water
Analysis Batch: 341143

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			09/07/16 13:25	1

Lab Sample ID: LCS 280-341143/2
Matrix: Water
Analysis Batch: 341143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	476		mg/L		95	86 - 110

Lab Sample ID: LCSD 280-341143/3
Matrix: Water
Analysis Batch: 341143

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	480		mg/L		96	86 - 110	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-340949/2
Matrix: Water
Analysis Batch: 340949

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			09/06/16 14:35	1

Lab Sample ID: LCS 280-340949/1
Matrix: Water
Analysis Batch: 340949

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	91.2		mg/L		91	86 - 114

Lab Sample ID: 280-87511-1 DU
Matrix: Water
Analysis Batch: 340949

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	4.0		3.60	J F5	mg/L		11	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-268953/1-A
Matrix: Water
Analysis Batch: 272623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268953

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.006514	U	0.0533	0.0533	1.00	0.0983	pCi/L	09/09/16 16:43	10/02/16 20:43	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*09/09/16 16:43*	*10/02/16 20:43*	*1*

Lab Sample ID: LCS 160-268953/2-A
Matrix: Water
Analysis Batch: 272623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268953

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.1	14.54		1.40	1.00	0.0583	pCi/L	131	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.2*		*40 - 110*

Lab Sample ID: MB 160-269082/1-A
Matrix: Water
Analysis Batch: 272742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 269082

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02135	U	0.0652	0.0653	1.00	0.121	pCi/L	09/11/16 19:46	10/03/16 10:59	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-269082/1-A
Matrix: Water
Analysis Batch: 272742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 269082

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.0		40 - 110	09/11/16 19:46	10/03/16 10:59	1

Lab Sample ID: LCS 160-269082/2-A
Matrix: Water
Analysis Batch: 272742

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 269082

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			14.8	17.91		1.75	1.00	0.112	pCi/L	121	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	86.9		40 - 110

Lab Sample ID: LCSD 160-269082/3-A
Matrix: Water
Analysis Batch: 272742

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 269082

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			14.8	19.19		1.87	1.00	0.104	pCi/L	130	68 - 137	0.35	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	84.6		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-268956/1-A
Matrix: Water
Analysis Batch: 270700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268956

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3624	U	0.291	0.293	1.00	0.461	pCi/L	09/09/16 17:18	09/20/16 17:37	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110	09/09/16 17:18	09/20/16 17:37	1
Y Carrier	81.5		40 - 110	09/09/16 17:18	09/20/16 17:37	1

Lab Sample ID: LCS 160-268956/2-A
Matrix: Water
Analysis Batch: 270700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268956

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.5	15.25		1.66	1.00	0.402	pCi/L	105	56 - 140		

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-268956/2-A
Matrix: Water
Analysis Batch: 270700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268956

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	87.2		40 - 110
Y Carrier	85.6		40 - 110

Lab Sample ID: MB 160-269083/1-A
Matrix: Water
Analysis Batch: 271445

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 269083

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3915	U	0.353	0.355	1.00	0.568	pCi/L	09/11/16 20:40	09/23/16 17:12	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.0		40 - 110	09/11/16 20:40	09/23/16 17:12	1
Y Carrier	91.2		40 - 110	09/11/16 20:40	09/23/16 17:12	1

Lab Sample ID: LCS 160-269083/2-A
Matrix: Water
Analysis Batch: 271445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 269083

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			19.4	19.42		2.11	1.00	0.577	pCi/L	100	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	86.9		40 - 110
Y Carrier	91.2		40 - 110

Lab Sample ID: LCSD 160-269083/3-A
Matrix: Water
Analysis Batch: 271445

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 269083

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			19.4	20.74		2.24	1.00	0.571	pCi/L	107	56 - 140	0.30	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	84.6		40 - 110
Y Carrier	88.2		40 - 110

Metals

Prep Batch: 245342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total Recoverable	Water	3005A	
280-87511-2	MW-1	Total Recoverable	Water	3005A	
280-87511-3	MW-3	Total Recoverable	Water	3005A	
280-87511-4	MW-4	Total Recoverable	Water	3005A	
280-87511-5	MW-6	Total Recoverable	Water	3005A	
280-87511-6	MW-7	Total Recoverable	Water	3005A	
280-87511-7	MW-8	Total Recoverable	Water	3005A	
280-87511-8	MW-4EB	Total Recoverable	Water	3005A	
MB 240-245342/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-245342/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 245604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total Recoverable	Water	6020A	245342
280-87511-2	MW-1	Total Recoverable	Water	6020A	245342
280-87511-3	MW-3	Total Recoverable	Water	6020A	245342
280-87511-3	MW-3	Total Recoverable	Water	6020A	245342
280-87511-4	MW-4	Total Recoverable	Water	6020A	245342
280-87511-5	MW-6	Total Recoverable	Water	6020A	245342
280-87511-6	MW-7	Total Recoverable	Water	6020A	245342
280-87511-7	MW-8	Total Recoverable	Water	6020A	245342
280-87511-8	MW-4EB	Total Recoverable	Water	6020A	245342
MB 240-245342/1-A	Method Blank	Total Recoverable	Water	6020A	245342
LCS 240-245342/2-A	Lab Control Sample	Total Recoverable	Water	6020A	245342

Analysis Batch: 245905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total Recoverable	Water	6020A	245342
280-87511-2	MW-1	Total Recoverable	Water	6020A	245342
280-87511-3	MW-3	Total Recoverable	Water	6020A	245342
280-87511-4	MW-4	Total Recoverable	Water	6020A	245342
280-87511-5	MW-6	Total Recoverable	Water	6020A	245342
280-87511-6	MW-7	Total Recoverable	Water	6020A	245342
280-87511-7	MW-8	Total Recoverable	Water	6020A	245342
280-87511-8	MW-4EB	Total Recoverable	Water	6020A	245342
MB 240-245342/1-A	Method Blank	Total Recoverable	Water	6020A	245342
LCS 240-245342/2-A	Lab Control Sample	Total Recoverable	Water	6020A	245342

Prep Batch: 341966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	7470A	
280-87511-2	MW-1	Total/NA	Water	7470A	
280-87511-3	MW-3	Total/NA	Water	7470A	
280-87511-4	MW-4	Total/NA	Water	7470A	
280-87511-5	MW-6	Total/NA	Water	7470A	
280-87511-6	MW-7	Total/NA	Water	7470A	
280-87511-7	MW-8	Total/NA	Water	7470A	
280-87511-8	MW-4EB	Total/NA	Water	7470A	
MB 280-341966/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-341966/2-A	Lab Control Sample	Total/NA	Water	7470A	

Metals (Continued)

Analysis Batch: 342471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	7470A	341966
280-87511-2	MW-1	Total/NA	Water	7470A	341966
280-87511-3	MW-3	Total/NA	Water	7470A	341966
280-87511-4	MW-4	Total/NA	Water	7470A	341966
280-87511-5	MW-6	Total/NA	Water	7470A	341966
280-87511-6	MW-7	Total/NA	Water	7470A	341966
280-87511-7	MW-8	Total/NA	Water	7470A	341966
280-87511-8	MW-4EB	Total/NA	Water	7470A	341966
MB 280-341966/1-A	Method Blank	Total/NA	Water	7470A	341966
LCS 280-341966/2-A	Lab Control Sample	Total/NA	Water	7470A	341966

General Chemistry

Analysis Batch: 340419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	9040B	
280-87511-2	MW-1	Total/NA	Water	9040B	
280-87511-3	MW-3	Total/NA	Water	9040B	
280-87511-4	MW-4	Total/NA	Water	9040B	
280-87511-5	MW-6	Total/NA	Water	9040B	
280-87511-6	MW-7	Total/NA	Water	9040B	
280-87511-7	MW-8	Total/NA	Water	9040B	
LCS 280-340419/29	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-340419/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 340507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-5	MW-6	Total/NA	Water	SM 2540C	
280-87511-6	MW-7	Total/NA	Water	SM 2540C	
280-87511-8	MW-4EB	Total/NA	Water	SM 2540C	
MB 280-340507/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-340507/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-87511-6 DU	MW-7	Total/NA	Water	SM 2540C	

Analysis Batch: 340886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	SM 2540C	
280-87511-2	MW-1	Total/NA	Water	SM 2540C	
280-87511-3	MW-3	Total/NA	Water	SM 2540C	
280-87511-4	MW-4	Total/NA	Water	SM 2540C	
MB 280-340886/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-340886/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 340949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	SM 2540D	
280-87511-2	MW-1	Total/NA	Water	SM 2540D	
280-87511-3	MW-3	Total/NA	Water	SM 2540D	
280-87511-4	MW-4	Total/NA	Water	SM 2540D	
280-87511-5	MW-6	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 340949 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-6	MW-7	Total/NA	Water	SM 2540D	
280-87511-7	MW-8	Total/NA	Water	SM 2540D	
280-87511-8	MW-4EB	Total/NA	Water	SM 2540D	
MB 280-340949/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-340949/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-87511-1 DU	MW-1P	Total/NA	Water	SM 2540D	

Analysis Batch: 341143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-7	MW-8	Total/NA	Water	SM 2540C	
MB 280-341143/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-341143/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-341143/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 341467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-8	MW-4EB	Total/NA	Water	9040B	
LCS 280-341467/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 342051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	9056A	
280-87511-2	MW-1	Total/NA	Water	9056A	
280-87511-2	MW-1	Total/NA	Water	9056A	
280-87511-3	MW-3	Total/NA	Water	9056A	
280-87511-3	MW-3	Total/NA	Water	9056A	
280-87511-4	MW-4	Total/NA	Water	9056A	
280-87511-4	MW-4	Total/NA	Water	9056A	
280-87511-5	MW-6	Total/NA	Water	9056A	
280-87511-5	MW-6	Total/NA	Water	9056A	
280-87511-6	MW-7	Total/NA	Water	9056A	
280-87511-7	MW-8	Total/NA	Water	9056A	
280-87511-7	MW-8	Total/NA	Water	9056A	
280-87511-8	MW-4EB	Total/NA	Water	9056A	
MB 280-342051/6	Method Blank	Total/NA	Water	9056A	
LCS 280-342051/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-342051/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-342051/3	Lab Control Sample	Total/NA	Water	9056A	
280-87511-1 MS	MW-1P	Total/NA	Water	9056A	
280-87511-1 MSD	MW-1P	Total/NA	Water	9056A	
280-87511-1 DU	MW-1P	Total/NA	Water	9056A	

Rad

Prep Batch: 268953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-5	MW-6	Total/NA	Water	PrecSep-21	
280-87511-6	MW-7	Total/NA	Water	PrecSep-21	
280-87511-7	MW-8	Total/NA	Water	PrecSep-21	
280-87511-8	MW-4EB	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 268953 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-268953/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-268953/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 268956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-5	MW-6	Total/NA	Water	PrecSep_0	
280-87511-6	MW-7	Total/NA	Water	PrecSep_0	
280-87511-7	MW-8	Total/NA	Water	PrecSep_0	
280-87511-8	MW-4EB	Total/NA	Water	PrecSep_0	
MB 160-268956/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-268956/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 269082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	PrecSep-21	
280-87511-2	MW-1	Total/NA	Water	PrecSep-21	
280-87511-3	MW-3	Total/NA	Water	PrecSep-21	
280-87511-4	MW-4	Total/NA	Water	PrecSep-21	
MB 160-269082/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-269082/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-269082/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 269083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87511-1	MW-1P	Total/NA	Water	PrecSep_0	
280-87511-2	MW-1	Total/NA	Water	PrecSep_0	
280-87511-3	MW-3	Total/NA	Water	PrecSep_0	
280-87511-4	MW-4	Total/NA	Water	PrecSep_0	
MB 160-269083/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-269083/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-269083/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Client Sample ID: MW-1P

Date Collected: 08/30/16 15:05
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:19	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10			245905	09/07/16 14:20	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:19	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 14:59	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 13:46	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	340886	09/06/16 10:02	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			750.62 mL	1.0 g	269082	09/11/16 19:46	TJT	TAL SL
Total/NA	Analysis	9315		1			272742	10/03/16 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			750.62 mL	1.0 g	269083	09/11/16 20:40	TJT	TAL SL
Total/NA	Analysis	9320		1			271445	09/23/16 17:12	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Client Sample ID: MW-1

Date Collected: 08/30/16 12:00
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:23	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5			245905	09/07/16 14:24	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:26	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 15:04	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 14:57	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	342051	09/14/16 22:06	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	340886	09/06/16 10:02	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			499.68 mL	1.0 g	269082	09/11/16 19:46	TJT	TAL SL
Total/NA	Analysis	9315		1			272742	10/03/16 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.68 mL	1.0 g	269083	09/11/16 20:40	TJT	TAL SL
Total/NA	Analysis	9320		1			271445	09/23/16 17:12	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Client Sample ID: MW-3

Date Collected: 08/30/16 13:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:28	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5			245604	09/06/16 11:00	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		20			245905	09/07/16 14:29	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:28	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 15:09	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 15:15	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	342051	09/14/16 22:24	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	340886	09/06/16 10:02	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			750.62 mL	1.0 g	269082	09/11/16 19:46	TJT	TAL SL
Total/NA	Analysis	9315		1			272742	10/03/16 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			750.62 mL	1.0 g	269083	09/11/16 20:40	TJT	TAL SL
Total/NA	Analysis	9320		1			271445	09/23/16 17:12	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Client Sample ID: MW-4

Date Collected: 08/29/16 10:30
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:32	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10			245905	09/07/16 14:45	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:31	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 15:14	CCJ	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	342051	09/14/16 15:32	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	342051	09/14/16 22:42	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	340886	09/06/16 10:02	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			499.33 mL	1.0 g	269082	09/11/16 19:46	TJT	TAL SL
Total/NA	Analysis	9315		1			272742	10/03/16 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.33 mL	1.0 g	269083	09/11/16 20:40	TJT	TAL SL
Total/NA	Analysis	9320		1			271445	09/23/16 17:12	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Client Sample ID: MW-6

Date Collected: 08/29/16 15:25
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:36	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5			245905	09/07/16 14:49	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:33	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 15:19	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 15:50	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	342051	09/14/16 22:59	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	340507	09/01/16 13:30	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			500.69 mL	1.0 g	268953	09/09/16 16:43	MCJ	TAL SL
Total/NA	Analysis	9315		1			272624	10/02/16 20:45	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.69 mL	1.0 g	268956	09/09/16 17:18	MCJ	TAL SL
Total/NA	Analysis	9320		1			270700	09/20/16 17:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Client Sample ID: MW-7

Date Collected: 08/29/16 13:50
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:40	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5			245905	09/07/16 14:54	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:35	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 15:33	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 16:44	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	340507	09/01/16 13:30	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			499.32 mL	1.0 g	268953	09/09/16 16:43	MCJ	TAL SL
Total/NA	Analysis	9315		1			272624	10/02/16 20:46	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.32 mL	1.0 g	268956	09/09/16 17:18	MCJ	TAL SL
Total/NA	Analysis	9320		1			270700	09/20/16 17:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Client Sample ID: MW-8

Date Collected: 08/30/16 10:40
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:44	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		10			245905	09/07/16 14:58	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:37	CDH	TAL DEN
Total/NA	Analysis	9040B		1			340419	08/31/16 15:38	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 17:01	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	342051	09/14/16 23:17	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	341143	09/07/16 13:25	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.65 mL	1.0 g	268953	09/09/16 16:43	MCJ	TAL SL
Total/NA	Analysis	9315		1			272624	10/02/16 20:46	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.65 mL	1.0 g	268956	09/09/16 17:18	MCJ	TAL SL
Total/NA	Analysis	9320		1			270700	09/20/16 17:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Client Sample ID: MW-4EB

Date Collected: 08/29/16 11:15
Date Received: 08/30/16 16:04

Lab Sample ID: 280-87511-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245604	09/06/16 10:48	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	245342	09/02/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			245905	09/07/16 15:02	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	341966	09/15/16 11:50	CDH	TAL DEN
Total/NA	Analysis	7470A		1			342471	09/15/16 16:40	CDH	TAL DEN
Total/NA	Analysis	9040B		1			341467	09/08/16 16:27	JAP	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	342051	09/14/16 17:19	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	340507	09/01/16 13:30	KMS	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	340949	09/06/16 14:35	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.35 mL	1.0 g	268953	09/09/16 16:43	MCJ	TAL SL
Total/NA	Analysis	9315		1			272624	10/02/16 20:46	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.35 mL	1.0 g	268956	09/09/16 17:18	MCJ	TAL SL
Total/NA	Analysis	9320		1			270700	09/20/16 17:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272835	10/04/16 02:28	ALS	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-16 *
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-16-10	07-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-87511 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Justin Bills	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 2
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Field Duplicate~~ JB MW-1P	8/30/16	1505	G	Water		N	1	2	1	1	2		
~~Equipment Blank~~ JB MW-1	8/30/16	1200	G	Water		N	1	2	1	1	2		
MW-3	8/30/16	1330	G			N	1	2	1	1	2		
MW-4	8/29/16	1030	G			N	1	2	1	1	2		
MW-6	8/29/16	1525	G			N	1	2	1	1	2		
MW-7	8/29/16	1350	G			N	1	2	1	1	2		
MW-8	8/30/16	1040	G			N	1	2	1	1	2		
MW-4EB	8/29/16	1115	G			N	1	2	1	1	2		

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
[signature]	8/30/16 1604	HDR	[signature]	1604 30 Aug 16	TAD

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.9, 5.1 IRS -0.0 [initials] 30 Aug 16

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-87511 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	QC No: 280-366118.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Job #: 280-87511-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 9/29/2016		
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Xcel Energy CCR - Valmont Station	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1P (280-87511-1)	8/30/16	15:05 Mountain		Water			X	X	2	
MW-1 (280-87511-2)	8/30/16	12:00 Mountain		Water			X	X	2	
MW-3 (280-87511-3)	8/30/16	13:30 Mountain		Water			X	X	2	
MW-4 (280-87511-4)	8/29/16	10:30 Mountain		Water			X	X	2	
MW-6 (280-87511-5)	8/29/16	15:25 Mountain		Water			X	X	2	
MW-7 (280-87511-6)	8/29/16	13:50 Mountain		Water			X	X	2	
MW-8 (280-87511-7)	8/30/16	10:40 Mountain		Water			X	X	2	
MW-4EB (280-87511-8)	8/29/16	11:15 Mountain		Water			X	X	2	

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 8/31/16 1400	Company	Received by: [signature]	Date/Time: 9-1-16 0925	Company TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

28/C3.8

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-366119.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-87511-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 9/26/2016			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A 14 Total Metals (w/collision cell) - 1/2	Total Number of containers	Special Instructions/Note: 545
			Preservation Code:						
MW-1P (280-87511-1)	8/30/16	15:05 Mountain		Water			X	1	Use Collision Cell
MW-1 (280-87511-2)	8/30/16	12:00 Mountain		Water			X	1	Use Collision Cell
MW-3 (280-87511-3)	8/30/16	13:30 Mountain		Water			X	1	Use Collision Cell
MW-4 (280-87511-4)	8/29/16	10:30 Mountain		Water			X	1	Use Collision Cell
MW-6 (280-87511-5)	8/29/16	15:25 Mountain		Water			X	1	Use Collision Cell
MW-7 (280-87511-6)	8/29/16	13:50 Mountain		Water			X	1	Use Collision Cell
MW-8 (280-87511-7)	8/30/16	10:40 Mountain		Water			X	1	Use Collision Cell
MW-4EB (280-87511-8)	8/29/16	11:15 Mountain		Water			X	1	Use Collision Cell

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1				BMatt	9/1/16 9:30	TAN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client TA Denver Site Name _____ Cooler unpacked by: BM

Cooler Received on 9/1/16 Opened on 9/1/16

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box (Client Cooler) Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF **+1.3** °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
   IR GUN #36 (CF **+1.0**°C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 3.8 °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity _____	Yes (No)	
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes No (NA)	
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	
3. Shippers' packing slip attached to the cooler(s)?	(Yes) No	
4. Did custody papers accompany the sample(s)?	(Yes) No	9/1/16 BM
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes) No	
7. Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8. Could all bottle labels be reconciled with the COC?	(Yes) No	
9. Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
10. Sufficient quantity received to perform indicated analyses?	(Yes) No	
11. Are these work share samples?	(Yes) No	
If yes, Questions 11-15 have been checked at the originating laboratory.		
11. Were sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# **HC574756**
12. Were VOAs on the COC?	Yes (No)	
13. Were air bubbles >6 mm in any VOA vials?	Yes No NA	
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes (No)	
15. Was a LL Hg or Me Hg trip blank present? _____	Yes (No)	

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-87511-1

Login Number: 87511
List Number: 1
Creator: Muniz, Ashley T

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	N/A	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-87511-1

Login Number: 87511
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 09/01/16 10:47 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-87511-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-87511-1	MW-1P	75.2
280-87511-2	MW-1	46.7
280-87511-3	MW-3	86.9
280-87511-4	MW-4	92.0
280-87511-5	MW-6	86.6
280-87511-6	MW-7	87.7
280-87511-7	MW-8	99.7
280-87511-8	MW-4EB	94.0
LCS 160-268953/2-A	Lab Control Sample	87.2
LCS 160-269082/2-A	Lab Control Sample	86.9
LCSD 160-269082/3-A	Lab Control Sample Dup	84.6
MB 160-268953/1-A	Method Blank	86.3
MB 160-269082/1-A	Method Blank	84.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-87511-1	MW-1P	75.2	89.0
280-87511-2	MW-1	46.7	86.4
280-87511-3	MW-3	86.9	86.7
280-87511-4	MW-4	92.0	84.9
280-87511-5	MW-6	86.6	81.9
280-87511-6	MW-7	87.7	88.2
280-87511-7	MW-8	99.7	83.4
280-87511-8	MW-4EB	94.0	82.6
LCS 160-268956/2-A	Lab Control Sample	87.2	85.6
LCS 160-269083/2-A	Lab Control Sample	86.9	91.2
LCSD 160-269083/3-A	Lab Control Sample Dup	84.6	88.2
MB 160-268956/1-A	Method Blank	86.3	81.5
MB 160-269083/1-A	Method Blank	84.0	91.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-90803-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Stephanie Rothmeyer

Authorized for release by:
12/22/2016 3:31:20 PM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
H	Sample was prepped or analyzed beyond the specified holding time

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-90803-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-90803-1

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.

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.

RECEIPT

The samples were received on 11/10/2016 at 4:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 3.8º C, 8.2º C, 8.3º C and 13.8º C.

The following samples were received at the laboratory outside the required temperature criteria: MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12), MW-12EB (280-90803-13). Three of four coolers were received outside of the required temperature criteria. The cooler temperatures are as follows: 8.3 C, 8.2 C, 13.8 C, and 3.8 C. The samples are considered acceptable since they were collected and submitted to the laboratory on the same day. The client was notified on 11/11/16.

TOTAL RECOVERABLE METALS

Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/15/2016 and analyzed on 11/16/2016.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 11/15/2016 and analyzed on 11/16/2016, 11/17/2016 and 11/18/2016.

Barium and Calcium were detected in method blank MB 240-255797/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium failed the recovery criteria high for the MS of sample MW-1P (280-90803-1) in batch 240-256064. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Sample MW-3 (280-90803-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Job ID: 280-90803-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

TOTAL MERCURY
Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/30/2016.

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

TOTAL DISSOLVED SOLIDS
Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 11/14/2016, 11/16/2016, 11/17/2016 and 11/28/2016.

Reanalysis of the following samples was performed outside of the analytical holding time due to the original results being over residue: MW-4 (280-90803-5), MW-8 (280-90803-7). Reanalysis was performed with the new results within residue limits.

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

TOTAL SUSPENDED SOLIDS
Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 11/14/2016 and 11/16/2016.

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

CORROSIVITY (PH)
Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 11/16/2016, 11/27/2016, 11/30/2016 and 12/01/2016.

This is a reanalysis because the sample did not stabilize in the initial test: MW-12EB (280-90803-13). The sample continued to not stabilize and therefore is reported as observed.

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

ANIONS (28 DAYS)
Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 12/04/2016 and 12/06/2016.

Samples MW-1 (280-90803-3)[5X], MW-3 (280-90803-4)[20X], MW-4 (280-90803-5)[10X], MW-4 (280-90803-5)[2X], MW-4 (280-90803-5)[50X], MW-6 (280-90803-6)[20X], MW-8 (280-90803-7)[20X], MW-9 (280-90803-8)[5X], MW-10 (280-90803-9)[5X] and MW-11 (280-90803-10)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6

Job ID: 280-90803-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

(280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 11/18/2016 and analyzed on 12/20/2016.

Radium-226 exceeded the RPD limit for the duplicate of sample 180-60609-1. Refer to the QC report for details.

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

RADIUM-228

Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 11/18/2016 and analyzed on 12/20/2016.

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-1P (280-90803-1), MW-7 (280-90803-2), MW-1 (280-90803-3), MW-3 (280-90803-4), MW-4 (280-90803-5), MW-6 (280-90803-6), MW-8 (280-90803-7), MW-9 (280-90803-8), MW-10 (280-90803-9), MW-11 (280-90803-10), MW-12 (280-90803-11), MW-12D (280-90803-12) and MW-12EB (280-90803-13) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 12/21/2016.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Client Sample ID: MW-1P — Lab Sample ID: 280-90803-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	920		200	8.1	ug/L	1		6010C	Total Recoverable
Antimony	0.00077	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0049	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.15	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	72	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00052	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00041	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00021	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00067	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.0026	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	76		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	1.1		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	52		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	410		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 280-90803-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	250		200	8.1	ug/L	1		6010C	Total Recoverable
Antimony	0.00072	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.00059	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.019	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	45	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00039	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0038		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0043	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00034	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0038	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.039		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-90803-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	21.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	50		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.47	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	97		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	690		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-90803-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	340		200	8.1	ug/L	1		6010C	Total Recoverable
Antimony	0.00094	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.00098	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.10	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	86	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0014		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0022		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.027		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0011		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0019	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.031		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	67		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.44	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	300		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	860		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	54		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-90803-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1400		200	8.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.00071	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.020	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	530	B	2.0	0.086	mg/L	2		6020A	Total Recoverable
Cobalt	0.00075	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0016	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Client Sample ID: MW-3 (Continued) — Lab Sample ID: 280-90803-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.00097	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00088	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00092	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.083		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	44		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.10	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2300		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3900		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	36		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-90803-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		200	8.1	ug/L	1		6010C	Total Recoverable
Antimony	0.00041	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.020		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.057	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	390	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0037		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0065		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.013		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0031		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.25		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.21		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	510		30	2.5	mg/L	10		9056A	Total/NA
Fluoride	3.4		1.0	0.12	mg/L	2		9056A	Total/NA
Sulfate	5600		250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9100	H	100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	79		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-90803-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	480		200	8.1	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued)

Lab Sample ID: 280-90803-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00030	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0025	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.061	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	280	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0018		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0048		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0014	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0041		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.015		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.056		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	470		60	5.1	mg/L	20		9056A	Total/NA
Fluoride	0.11	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	510		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	2100		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	35		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 280-90803-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	780		200	8.1	ug/L	1		6010C	Total Recoverable
Antimony	0.00032	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0017	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.033	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	460	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0015		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0038		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00064	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0017		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0099		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.11		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120		3.0	0.25	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-8 (Continued) — Lab Sample ID: 280-90803-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.085	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2500		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4100	H	40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	70		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-90803-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	13000		200	8.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.0016	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.054	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	110	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0088		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Molybdenum	0.15		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00028	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00053	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.026		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	56		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.0		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	540		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	7.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-90803-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	16000		200	8.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.00083	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.048	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	100	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0081		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Molybdenum	0.22		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00022	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Lithium	0.036		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 280-90803-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	61		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.7		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	590		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-90803-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2800		200	8.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.0062		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.071	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	150	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.038		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Molybdenum	0.039		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00081	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0011	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.039		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	66		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.7		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	660		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1600		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	7.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-90803-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3800		200	8.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.0053		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.11	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	150	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.013		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00036	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0037	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00051	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-12 (Continued) — Lab Sample ID: 280-90803-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0044	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.56		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2.0	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	930		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12D — Lab Sample ID: 280-90803-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3700		200	8.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.0052		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.11	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	150	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.013		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00036	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0036	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00051	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Lithium	0.0038	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	43		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.56		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2.0	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	910		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	19		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12EB — Lab Sample ID: 280-90803-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	18	J	200	8.1	ug/L	1		6010C	Total Recoverable
Lithium	0.00083	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	6.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Sulfate	0.25	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-90803-1	MW-1P	Water	11/10/16 10:40	11/10/16 16:15
280-90803-2	MW-7	Water	11/10/16 09:55	11/10/16 16:15
280-90803-3	MW-1	Water	11/10/16 12:10	11/10/16 16:15
280-90803-4	MW-3	Water	11/07/16 15:45	11/10/16 16:15
280-90803-5	MW-4	Water	11/10/16 12:55	11/10/16 16:15
280-90803-6	MW-6	Water	11/10/16 14:00	11/10/16 16:15
280-90803-7	MW-8	Water	11/10/16 11:15	11/10/16 16:15
280-90803-8	MW-9	Water	11/10/16 11:53	11/10/16 16:15
280-90803-9	MW-10	Water	11/10/16 13:40	11/10/16 16:15
280-90803-10	MW-11	Water	11/10/16 15:15	11/10/16 16:15
280-90803-11	MW-12	Water	11/09/16 11:45	11/10/16 16:15
280-90803-12	MW-12D	Water	11/09/16 11:45	11/10/16 16:15
280-90803-13	MW-12EB	Water	11/09/16 12:30	11/10/16 16:15

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	920		200	8.1	ug/L		11/15/16 14:00	11/16/16 15:39	1

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	250		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:16	1

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	340		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:20	1

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1400		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:24	1

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:29	1

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	480		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:33	1

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	780		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:38	1

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	13000		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:42	1

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	16000		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:55	1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15
Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2800		200	8.1	ug/L		11/15/16 14:00	11/16/16 16:59	1

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15
Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3800		200	8.1	ug/L		11/15/16 14:00	11/16/16 17:03	1

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15
Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3700		200	8.1	ug/L		11/15/16 14:00	11/16/16 17:07	1

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15
Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	18	J	200	8.1	ug/L		11/15/16 14:00	11/16/16 17:12	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15
Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00077	J	0.0020	0.00027	mg/L		11/15/16 14:00	11/16/16 16:12	1
Arsenic	0.0049	J	0.0050	0.00035	mg/L		11/15/16 14:00	11/16/16 16:12	1
Barium	0.15	B	0.0050	0.00052	mg/L		11/15/16 14:00	11/16/16 16:12	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/16/16 16:12	1
Calcium	72	B	1.0	0.043	mg/L		11/15/16 14:00	11/16/16 16:12	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/16/16 16:12	1
Cobalt	0.00052	J	0.0010	0.00013	mg/L		11/15/16 14:00	11/16/16 16:12	1
Chromium	0.00041	J	0.0020	0.00026	mg/L		11/15/16 14:00	11/16/16 16:12	1
Molybdenum	0.015		0.010	0.00051	mg/L		11/15/16 14:00	11/16/16 16:12	1
Lead	0.00021	J	0.0010	0.00016	mg/L		11/15/16 14:00	11/16/16 16:12	1
Selenium	0.00067	J	0.0050	0.00048	mg/L		11/15/16 14:00	11/16/16 16:12	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/16/16 16:12	1
Lithium	0.0026	J	0.0080	0.00016	mg/L		11/15/16 14:00	11/16/16 16:12	1

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15
Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00072	J	0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 00:50	1
Arsenic	0.00059	J	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 00:50	1
Barium	0.019	B	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 00:50	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 00:50	1
Calcium	45	B	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 00:50	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 00:50	1
Cobalt	0.00039	J	0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 00:50	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.0038		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 00:50	1
Molybdenum	0.0043	J	0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 00:50	1
Lead	0.00034	J	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 00:50	1
Selenium	0.0038	J	0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 00:50	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 00:50	1
Lithium	0.039		0.0080	0.00016	mg/L		11/15/16 14:00	11/17/16 00:50	1

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00094	J	0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 00:54	1
Arsenic	0.00098	J	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 00:54	1
Barium	0.10	B	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 00:54	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 00:54	1
Calcium	86	B	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 00:54	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 00:54	1
Cobalt	0.0014		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 00:54	1
Chromium	0.0022		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 00:54	1
Molybdenum	0.027		0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 00:54	1
Lead	0.0011		0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 00:54	1
Selenium	0.0019	J	0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 00:54	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 00:54	1
Lithium	0.031		0.0080	0.00016	mg/L		11/15/16 14:00	11/17/16 00:54	1

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 00:58	1
Arsenic	0.00071	J	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 00:58	1
Barium	0.020	B	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 00:58	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 00:58	1
Calcium	530	B	2.0	0.086	mg/L		11/15/16 14:00	11/17/16 22:10	2
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 00:58	1
Cobalt	0.00075	J	0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 00:58	1
Chromium	0.0016	J	0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 00:58	1
Molybdenum	0.00097	J	0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 00:58	1
Lead	0.00088	J	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 00:58	1
Selenium	0.00092	J	0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 00:58	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 00:58	1
Lithium	0.083		0.0080	0.00016	mg/L		11/15/16 14:00	11/17/16 00:58	1

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00041	J	0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:03	1
Arsenic	0.020		0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:03	1
Barium	0.057	B	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 01:03	1
Calcium	**390**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:03	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:03	1
Cobalt	**0.0037**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:03	1
Chromium	**0.0065**		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:03	1
Molybdenum	**0.013**		0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:03	1
Lead	**0.0031**		0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:03	1
Selenium	**0.25**		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:03	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:03	1
Lithium	**0.21**		0.0080	0.00016	mg/L		11/15/16 14:00	11/17/16 01:03	1

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00030**	**J**	0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:15	1
Arsenic	**0.0025**	**J**	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:15	1
Barium	**0.061**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:15	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:14	1
Calcium	**280**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:15	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:15	1
Cobalt	**0.0018**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:15	1
Chromium	**0.0048**		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:15	1
Molybdenum	**0.0014**	**J**	0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:15	1
Lead	**0.0041**		0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:15	1
Selenium	**0.015**		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:15	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:15	1
Lithium	**0.056**		0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 16:57	1

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00032**	**J**	0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:19	1
Arsenic	**0.0017**	**J**	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:19	1
Barium	**0.033**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:19	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:18	1
Calcium	**460**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:19	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:19	1
Cobalt	**0.0015**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:19	1
Chromium	**0.0038**		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:19	1
Molybdenum	**0.00064**	**J**	0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:19	1
Lead	**0.0017**		0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:19	1
Selenium	**0.0099**		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:19	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:19	1
Lithium	**0.11**		0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:01	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:23	1
Arsenic	**0.0016**	**J**	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:23	1
Barium	**0.054**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:23	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:22	1
Calcium	**110**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:23	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:23	1
Cobalt	**0.0088**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:23	1
Chromium	ND		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:23	1
Molybdenum	**0.15**		0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:23	1
Lead	**0.00028**	**J**	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:23	1
Selenium	**0.00053**	**J**	0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:23	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:23	1
Lithium	**0.026**		0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:05	1

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:28	1
Arsenic	**0.00083**	**J**	0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:28	1
Barium	**0.048**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:28	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:26	1
Calcium	**100**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:28	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:28	1
Cobalt	**0.0081**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:28	1
Chromium	ND		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:28	1
Molybdenum	**0.22**		0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:28	1
Lead	**0.00022**	**J**	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:28	1
Selenium	ND		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:28	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:28	1
Lithium	**0.036**		0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:09	1

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:32	1
Arsenic	**0.0062**		0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:32	1
Barium	**0.071**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:32	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:30	1
Calcium	**150**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:32	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:32	1
Cobalt	**0.038**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:32	1
Chromium	ND		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:32	1
Molybdenum	**0.039**		0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:32	1
Lead	**0.00081**	**J**	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:32	1
Selenium	**0.0011**	**J**	0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:32	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:32	1
Lithium	**0.039**		0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:14	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:36	1
Arsenic	**0.0053**		0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:36	1
Barium	**0.11**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:36	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:34	1
Calcium	**150**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:36	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:36	1
Cobalt	**0.013**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:36	1
Chromium	**0.00036**	**J**	0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:36	1
Molybdenum	**0.0037**	**J**	0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:36	1
Lead	**0.00051**	**J**	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:36	1
Selenium	ND		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:36	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:36	1
Lithium	**0.0044**	**J**	0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:18	1

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:40	1
Arsenic	**0.0052**		0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:40	1
Barium	**0.11**	**B**	0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:40	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:39	1
Calcium	**150**	**B**	1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:40	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:40	1
Cobalt	**0.013**		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:40	1
Chromium	**0.00036**	**J**	0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:40	1
Molybdenum	**0.0036**	**J**	0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:40	1
Lead	**0.00051**	**J**	0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:40	1
Selenium	ND		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:40	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:40	1
Lithium	**0.0038**	**J**	0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:22	1

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/17/16 01:44	1
Arsenic	ND		0.0050	0.00035	mg/L		11/15/16 14:00	11/17/16 01:44	1
Barium	ND		0.0050	0.00052	mg/L		11/15/16 14:00	11/17/16 01:44	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/17/16 22:43	1
Calcium	ND		1.0	0.043	mg/L		11/15/16 14:00	11/17/16 01:44	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/17/16 01:44	1
Cobalt	ND		0.0010	0.00013	mg/L		11/15/16 14:00	11/17/16 01:44	1
Chromium	ND		0.0020	0.00026	mg/L		11/15/16 14:00	11/17/16 01:44	1
Molybdenum	ND		0.010	0.00051	mg/L		11/15/16 14:00	11/17/16 01:44	1
Lead	ND		0.0010	0.00016	mg/L		11/15/16 14:00	11/17/16 01:44	1
Selenium	ND		0.0050	0.00048	mg/L		11/15/16 14:00	11/17/16 01:44	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/17/16 01:44	1
Lithium	**0.00083**	**J**	0.0080	0.00016	mg/L		11/15/16 14:00	11/18/16 17:26	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:21	1

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:28	1

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:30	1

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:32	1

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:34	1

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:41	1

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:43	1

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:45	1

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:48	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:50	1

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:52	1

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:54	1

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:57	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			11/27/16 12:27	1
Temperature	20.9	HF	1.0	1.0	Degrees C			11/27/16 12:27	1
Chloride	76		3.0	0.25	mg/L			12/06/16 14:57	1
Fluoride	1.1		0.50	0.060	mg/L			12/06/16 14:57	1
Sulfate	52		5.0	0.23	mg/L			12/06/16 14:57	1
Total Dissolved Solids (TDS)	410		10	4.7	mg/L			11/17/16 11:39	1
Total Suspended Solids	5.6		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			11/27/16 12:31	1
Temperature	21.0	HF	1.0	1.0	Degrees C			11/27/16 12:31	1
Chloride	50		3.0	0.25	mg/L			12/06/16 15:15	1
Fluoride	0.47	J	0.50	0.060	mg/L			12/06/16 15:15	1
Sulfate	97		5.0	0.23	mg/L			12/06/16 15:15	1
Total Dissolved Solids (TDS)	690		10	4.7	mg/L			11/17/16 11:39	1
Total Suspended Solids	20		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			11/27/16 12:35	1

General Chemistry (Continued)

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	20.9	HF	1.0	1.0	Degrees C			11/27/16 12:35	1
Chloride	67		3.0	0.25	mg/L			12/06/16 15:33	1
Fluoride	0.44	J	0.50	0.060	mg/L			12/06/16 15:33	1
Sulfate	300		25	1.2	mg/L			12/06/16 20:21	5
Total Dissolved Solids (TDS)	860		10	4.7	mg/L			11/17/16 11:39	1
Total Suspended Solids	54		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			11/27/16 12:39	1
Temperature	21.0	HF	1.0	1.0	Degrees C			11/27/16 12:39	1
Chloride	44		3.0	0.25	mg/L			12/04/16 10:48	1
Fluoride	0.10	J	0.50	0.060	mg/L			12/04/16 10:48	1
Sulfate	2300		100	4.6	mg/L			12/04/16 19:56	20
Total Dissolved Solids (TDS)	3900		20	9.4	mg/L			11/14/16 10:35	1
Total Suspended Solids	36		4.0	1.1	mg/L			11/14/16 16:05	1

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			11/27/16 12:43	1
Temperature	21.2	HF	1.0	1.0	Degrees C			11/27/16 12:43	1
Chloride	510		30	2.5	mg/L			12/06/16 20:57	10
Fluoride	3.4		1.0	0.12	mg/L			12/06/16 16:08	2
Sulfate	5600		250	12	mg/L			12/06/16 23:02	50
Total Dissolved Solids (TDS)	9100	H	100	47	mg/L			11/28/16 09:00	1
Total Suspended Solids	79		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			11/27/16 12:47	1
Temperature	21.4	HF	1.0	1.0	Degrees C			11/27/16 12:47	1
Chloride	470		60	5.1	mg/L			12/06/16 16:44	20
Fluoride	0.11	J	0.50	0.060	mg/L			12/06/16 16:26	1
Sulfate	510		100	4.6	mg/L			12/06/16 16:44	20
Total Dissolved Solids (TDS)	2100		20	9.4	mg/L			11/17/16 11:39	1
Total Suspended Solids	35		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			11/27/16 12:51	1
Temperature	21.5	HF	1.0	1.0	Degrees C			11/27/16 12:51	1
Chloride	120		3.0	0.25	mg/L			12/06/16 17:37	1

General Chemistry (Continued)

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.085	J	0.50	0.060	mg/L			12/06/16 17:37	1
Sulfate	2500		100	4.6	mg/L			12/06/16 21:51	20
Total Dissolved Solids (TDS)	4100	H	40	19	mg/L			11/28/16 09:00	1
Total Suspended Solids	70		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			11/27/16 12:56	1
Temperature	21.4	HF	1.0	1.0	Degrees C			11/27/16 12:56	1
Chloride	56		3.0	0.25	mg/L			12/06/16 17:55	1
Fluoride	3.0		0.50	0.060	mg/L			12/06/16 17:55	1
Sulfate	540		25	1.2	mg/L			12/06/16 23:20	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			11/17/16 11:39	1
Total Suspended Solids	7.6		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			11/16/16 16:30	1
Temperature	23.4	HF	1.0	1.0	Degrees C			11/16/16 16:30	1
Chloride	61		3.0	0.25	mg/L			12/06/16 18:13	1
Fluoride	3.7		0.50	0.060	mg/L			12/06/16 18:13	1
Sulfate	590		25	1.2	mg/L			12/06/16 23:37	5
Total Dissolved Solids (TDS)	1200		10	4.7	mg/L			11/17/16 11:39	1
Total Suspended Solids	2.8	J	4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			11/30/16 12:45	1
Temperature	22.1	HF	1.0	1.0	Degrees C			11/30/16 12:45	1
Chloride	66		3.0	0.25	mg/L			12/06/16 18:31	1
Fluoride	2.7		0.50	0.060	mg/L			12/06/16 18:31	1
Sulfate	660		25	1.2	mg/L			12/06/16 23:55	5
Total Dissolved Solids (TDS)	1600		10	4.7	mg/L			11/17/16 11:39	1
Total Suspended Solids	7.2		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU			11/30/16 12:55	1
Temperature	21.2	HF	1.0	1.0	Degrees C			11/30/16 12:55	1
Chloride	43		3.0	0.25	mg/L			12/06/16 14:04	1
Fluoride	0.56		0.50	0.060	mg/L			12/06/16 14:04	1
Sulfate	2.0	J	5.0	0.23	mg/L			12/06/16 14:04	1

General Chemistry (Continued)

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	**930**		10	4.7	mg/L			11/16/16 10:49	1
Total Suspended Solids	**20**		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.1**	**HF**	0.1	0.1	SU			11/30/16 13:00	1
Temperature	**21.1**	**HF**	1.0	1.0	Degrees C			11/30/16 13:00	1
Chloride	**43**		3.0	0.25	mg/L			12/06/16 14:21	1
Fluoride	**0.56**		0.50	0.060	mg/L			12/06/16 14:21	1
Sulfate	**2.0**	**J**	5.0	0.23	mg/L			12/06/16 14:21	1
Total Dissolved Solids (TDS)	**910**		10	4.7	mg/L			11/16/16 10:49	1
Total Suspended Solids	**19**		4.0	1.1	mg/L			11/16/16 17:00	1

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**6.2**	**HF**	0.1	0.1	SU			12/01/16 13:28	1
Temperature	**21.9**	**HF**	1.0	1.0	Degrees C			12/01/16 13:28	1
Chloride	ND		3.0	0.25	mg/L			12/06/16 14:39	1
Fluoride	ND		0.50	0.060	mg/L			12/06/16 14:39	1
Sulfate	**0.25**	**J**	5.0	0.23	mg/L			12/06/16 14:39	1
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/16/16 10:49	1
Total Suspended Solids	**1.2**	**J**	4.0	1.1	mg/L			11/16/16 17:00	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.125	U	0.241	0.241	1.00	0.428	pCi/L	11/18/16 11:09	12/20/16 21:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:48*	*1*

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.390	U	0.301	0.303	1.00	0.439	pCi/L	11/18/16 11:09	12/20/16 21:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:47*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.310	U	0.271	0.272	1.00	0.402	pCi/L	11/18/16 11:09	12/20/16 21:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:47*	*1*

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.481**		0.311	0.314	1.00	0.421	pCi/L	11/18/16 11:09	12/20/16 21:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:47*	*1*

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.408**		0.285	0.288	1.00	0.393	pCi/L	11/18/16 11:09	12/20/16 21:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.5*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:47*	*1*

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.308	U	0.322	0.324	1.00	0.517	pCi/L	11/18/16 11:09	12/20/16 21:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.9*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:56*	*1*

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.898**		0.378	0.387	1.00	0.446	pCi/L	11/18/16 11:09	12/20/16 21:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:56*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.177	U	0.260	0.261	1.00	0.445	pCi/L	11/18/16 11:09	12/20/16 21:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.9*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:56*	*1*

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.404	U	0.350	0.352	1.00	0.524	pCi/L	11/18/16 11:09	12/20/16 21:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*55.6*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:56*	*1*

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.400	U	0.288	0.290	1.00	0.404	pCi/L	11/18/16 11:09	12/20/16 21:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.5*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:57*	*1*

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.193	U	0.237	0.238	1.00	0.391	pCi/L	11/18/16 11:09	12/20/16 21:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:57*	*1*

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.110	U	0.181	0.181	1.00	0.442	pCi/L	11/18/16 11:09	12/20/16 21:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:57*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0270	U	0.208	0.208	1.00	0.418	pCi/L	11/18/16 11:09	12/20/16 21:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.1*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.225	U	0.252	0.253	1.00	0.414	pCi/L	11/18/16 11:44	12/20/16 16:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:38*	*1*
Y Carrier	*83.0*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:38*	*1*

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.615**		0.321	0.326	1.00	0.479	pCi/L	11/18/16 11:44	12/20/16 16:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:39*	*1*
Y Carrier	*81.1*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:39*	*1*

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.386	U	0.309	0.311	1.00	0.489	pCi/L	11/18/16 11:44	12/20/16 16:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:40*	*1*
Y Carrier	*86.4*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.753**		0.329	0.336	1.00	0.473	pCi/L	11/18/16 11:44	12/20/16 16:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:40*	*1*
Y Carrier	*84.5*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:40*	*1*

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.567	U	0.368	0.371	1.00	0.570	pCi/L	11/18/16 11:44	12/20/16 16:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.5*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:44*	*1*
Y Carrier	*74.0*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:44*	*1*

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.450	U	0.313	0.315	1.00	0.485	pCi/L	11/18/16 11:44	12/20/16 16:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.9*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:44*	*1*
Y Carrier	*83.0*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:44*	*1*

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.17**		0.335	0.351	1.00	0.421	pCi/L	11/18/16 11:44	12/20/16 16:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:44*	*1*
Y Carrier	*81.5*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:44*	*1*

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.136	U	0.401	0.401	1.00	0.688	pCi/L	11/18/16 11:44	12/20/16 16:44	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	68.9		40 - 110	11/18/16 11:44	12/20/16 16:44	1
Y Carrier	82.6		40 - 110	11/18/16 11:44	12/20/16 16:44	1

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.533	U	0.382	0.385	1.00	0.595	pCi/L	11/18/16 11:44	12/20/16 16:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	55.6		40 - 110	11/18/16 11:44	12/20/16 16:41	1
Y Carrier	86.4		40 - 110	11/18/16 11:44	12/20/16 16:41	1

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.504**		0.286	0.290	1.00	0.430	pCi/L	11/18/16 11:44	12/20/16 16:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	79.5		40 - 110	11/18/16 11:44	12/20/16 16:41	1
Y Carrier	87.9		40 - 110	11/18/16 11:44	12/20/16 16:41	1

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0254	U	0.220	0.220	1.00	0.392	pCi/L	11/18/16 11:44	12/20/16 16:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110	11/18/16 11:44	12/20/16 16:41	1
Y Carrier	84.5		40 - 110	11/18/16 11:44	12/20/16 16:41	1

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.845**		0.387	0.395	1.00	0.555	pCi/L	11/18/16 11:44	12/20/16 16:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	72.6		40 - 110	11/18/16 11:44	12/20/16 16:41	1
Y Carrier	73.3		40 - 110	11/18/16 11:44	12/20/16 16:41	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.231	U	0.319	0.320	1.00	0.533	pCi/L	11/18/16 11:44	12/20/16 16:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.1*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:41*	*1*
Y Carrier	*82.2*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:41*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P
Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.350	U	0.349	0.350	5.00	0.428	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-7
Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.01**		0.440	0.445	5.00	0.479	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-1
Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.695**		0.411	0.413	5.00	0.489	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-3
Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.23**		0.453	0.460	5.00	0.473	pCi/L		12/21/16 15:05	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-4
Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.976		0.466	0.470	5.00	0.570	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-6
Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.758		0.449	0.452	5.00	0.517	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-8
Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.07		0.505	0.522	5.00	0.446	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-9
Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.314	U	0.478	0.478	5.00	0.688	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.937		0.518	0.522	5.00	0.595	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.904		0.405	0.410	5.00	0.430	pCi/L		12/21/16 15:05	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-12
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.218	U	0.324	0.324	5.00	0.392	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-12D
Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.735**		0.427	0.434	5.00	0.555	pCi/L		12/21/16 15:05	1

Client Sample ID: MW-12EB
Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.258	U	0.381	0.382	5.00	0.533	pCi/L		12/21/16 15:05	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-255797/1-A
Matrix: Water
Analysis Batch: 255975

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		200	8.1	ug/L		11/15/16 14:00	11/16/16 15:31	1

Lab Sample ID: LCS 240-255797/2-A
Matrix: Water
Analysis Batch: 255975

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	995		ug/L		99	80 - 120

Lab Sample ID: 280-90803-1 MS
Matrix: Water
Analysis Batch: 255975

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	920		1000	1910		ug/L		99	75 - 125

Lab Sample ID: 280-90803-1 MSD
Matrix: Water
Analysis Batch: 255975

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	920		1000	1890		ug/L		97	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-255797/1-A
Matrix: Water
Analysis Batch: 256064

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		11/15/16 14:00	11/16/16 16:04	1
Arsenic	ND		0.0050	0.00035	mg/L		11/15/16 14:00	11/16/16 16:04	1
Barium	0.000883	J	0.0050	0.00052	mg/L		11/15/16 14:00	11/16/16 16:04	1
Beryllium	ND		0.0010	0.00040	mg/L		11/15/16 14:00	11/16/16 16:04	1
Calcium	0.274	J	1.0	0.043	mg/L		11/15/16 14:00	11/16/16 16:04	1
Cadmium	ND		0.0010	0.00031	mg/L		11/15/16 14:00	11/16/16 16:04	1
Cobalt	ND		0.0010	0.00013	mg/L		11/15/16 14:00	11/16/16 16:04	1
Chromium	ND		0.0020	0.00026	mg/L		11/15/16 14:00	11/16/16 16:04	1
Molybdenum	ND		0.010	0.00051	mg/L		11/15/16 14:00	11/16/16 16:04	1
Lead	ND		0.0010	0.00016	mg/L		11/15/16 14:00	11/16/16 16:04	1
Selenium	ND		0.0050	0.00048	mg/L		11/15/16 14:00	11/16/16 16:04	1
Thallium	ND		0.0010	0.00028	mg/L		11/15/16 14:00	11/16/16 16:04	1
Lithium	ND		0.0080	0.00016	mg/L		11/15/16 14:00	11/16/16 16:04	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 240-255797/3-A
Matrix: Water
Analysis Batch: 256064

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony			0.100	0.0971		mg/L		97	80 - 120		
Arsenic			1.00	1.03		mg/L		103	80 - 120		
Barium			1.00	1.08		mg/L		108	80 - 120		
Beryllium			1.00	0.946		mg/L		95	80 - 120		
Calcium			10.0	10.3		mg/L		103	80 - 120		
Cadmium			1.00	0.997		mg/L		100	80 - 120		
Cobalt			1.00	0.967		mg/L		97	80 - 120		
Chromium			1.00	0.954		mg/L		95	80 - 120		
Molybdenum			0.100	0.0947		mg/L		95	80 - 120		
Lead			1.00	0.980		mg/L		98	80 - 120		
Selenium			1.00	1.00		mg/L		100	80 - 120		
Thallium			0.250	0.244		mg/L		97	80 - 120		
Lithium			0.100	0.0938		mg/L		94	80 - 120		

Lab Sample ID: 280-90803-1 MS
Matrix: Water
Analysis Batch: 256064

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony	0.00077	J	0.100	0.102		mg/L		102	75 - 125		
Arsenic	0.0049	J	1.00	1.06		mg/L		105	75 - 125		
Barium	0.15	B	1.00	1.31		mg/L		116	75 - 125		
Beryllium	ND		1.00	0.988		mg/L		99	75 - 125		
Calcium	72	B	10.0	84.8	4	mg/L		128	75 - 125		
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125		
Cobalt	0.00052	J	1.00	0.960		mg/L		96	75 - 125		
Chromium	0.00041	J	1.00	0.970		mg/L		97	75 - 125		
Molybdenum	0.015		0.100	0.114		mg/L		99	75 - 125		
Lead	0.00021	J	1.00	0.963		mg/L		96	75 - 125		
Selenium	0.00067	J	1.00	0.998		mg/L		100	75 - 125		
Thallium	ND		0.250	0.246		mg/L		98	75 - 125		
Lithium	0.0026	J	0.100	0.101		mg/L		99	75 - 125		

Lab Sample ID: 280-90803-1 MSD
Matrix: Water
Analysis Batch: 256064

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00077	J	0.100	0.102		mg/L		101	75 - 125	1	20
Arsenic	0.0049	J	1.00	1.04		mg/L		104	75 - 125	1	20
Barium	0.15	B	1.00	1.28		mg/L		113	75 - 125	2	20
Beryllium	ND		1.00	0.975		mg/L		97	75 - 125	1	20
Calcium	72	B	10.0	83.9	4	mg/L		119	75 - 125	1	20
Cadmium	ND		1.00	1.00		mg/L		100	75 - 125	0	20
Cobalt	0.00052	J	1.00	0.954		mg/L		95	75 - 125	1	20
Chromium	0.00041	J	1.00	0.956		mg/L		96	75 - 125	1	20
Molybdenum	0.015		0.100	0.114		mg/L		98	75 - 125	1	20
Lead	0.00021	J	1.00	0.962		mg/L		96	75 - 125	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-90803-1 MSD
Matrix: Water
Analysis Batch: 256064

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 255797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.00067	J	1.00	0.975		mg/L		97	75 - 125	2	20
Thallium	ND		0.250	0.244		mg/L		97	75 - 125	1	20
Lithium	0.0026	J	0.100	0.100		mg/L		98	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-353247/1-A
Matrix: Water
Analysis Batch: 353825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 353247

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		11/30/16 11:37	11/30/16 20:07	1

Lab Sample ID: LCS 280-353247/2-A
Matrix: Water
Analysis Batch: 353825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 353247

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.91		ug/L		98	84 - 120

Lab Sample ID: 280-90803-1 MS
Matrix: Water
Analysis Batch: 353825

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 353247

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		5.00	4.77		ug/L		95	75 - 125

Lab Sample ID: 280-90803-1 MSD
Matrix: Water
Analysis Batch: 353825

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 353247

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		5.00	5.17		ug/L		103	75 - 125	8	20

Method: 9040B - pH

Lab Sample ID: LCS 280-351913/29
Matrix: Water
Analysis Batch: 351913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-353200/4
Matrix: Water
Analysis Batch: 353200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9040B - pH (Continued)

Lab Sample ID: LCS 280-353774/4
Matrix: Water
Analysis Batch: 353774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH adj. to 25 deg C			7.00	7.0		SU		100	99 - 101		

Lab Sample ID: 280-90803-10 DU
Matrix: Water
Analysis Batch: 353774

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH adj. to 25 deg C	7.3	HF		7.3		SU				0.4	5
Temperature	22.1	HF		21.5		Degrees C				3	10

Lab Sample ID: LCS 280-354137/4
Matrix: Water
Analysis Batch: 354137

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH adj. to 25 deg C			7.00	7.0		SU		100	99 - 101		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-354156/6
Matrix: Water
Analysis Batch: 354156

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			12/04/16 10:31	1
Fluoride	ND		0.50	0.060	mg/L			12/04/16 10:31	1
Sulfate	ND		5.0	0.23	mg/L			12/04/16 10:31	1

Lab Sample ID: LCS 280-354156/4
Matrix: Water
Analysis Batch: 354156

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			100	102		mg/L		102	90 - 110		
Fluoride			5.00	5.17		mg/L		103	90 - 110		
Sulfate			100	102		mg/L		102	90 - 110		

Lab Sample ID: LCSD 280-354156/5
Matrix: Water
Analysis Batch: 354156

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			100	101		mg/L		101	90 - 110	0	10
Fluoride			5.00	5.16		mg/L		103	90 - 110	0	10
Sulfate			100	102		mg/L		102	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-354156/3
Matrix: Water
Analysis Batch: 354156

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.58	J	mg/L		103	50 - 150
Fluoride	0.200	0.196	J	mg/L		98	50 - 150
Sulfate	2.50	2.54	J	mg/L		102	50 - 150

Lab Sample ID: MB 280-354366/6
Matrix: Water
Analysis Batch: 354366

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			12/06/16 13:30	1
Fluoride	ND		0.50	0.060	mg/L			12/06/16 13:30	1
Sulfate	ND		5.0	0.23	mg/L			12/06/16 13:30	1

Lab Sample ID: LCS 280-354366/4
Matrix: Water
Analysis Batch: 354366

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	101		mg/L		101	90 - 110
Fluoride	5.00	5.09		mg/L		102	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-354366/5
Matrix: Water
Analysis Batch: 354366

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.07		mg/L		101	90 - 110	0	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-354366/3
Matrix: Water
Analysis Batch: 354366

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.55	J	mg/L		102	50 - 150
Fluoride	0.200	0.167	J	mg/L		83	50 - 150
Sulfate	2.50	2.55	J	mg/L		102	50 - 150

Lab Sample ID: 280-90803-1 MS
Matrix: Water
Analysis Batch: 354366

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	76		25.0	98.8		mg/L		92	80 - 120
Fluoride	1.1		5.00	5.56		mg/L		90	80 - 120
Sulfate	52		25.0	74.9		mg/L		94	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-90803-1 MSD
Matrix: Water
Analysis Batch: 354366

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	76		25.0	99.7		mg/L		95	80 - 120	1	20
Fluoride	1.1		5.00	5.75		mg/L		94	80 - 120	3	20
Sulfate	52		25.0	75.6		mg/L		96	80 - 120	1	20

Lab Sample ID: 280-90803-11 MS
Matrix: Water
Analysis Batch: 354366

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	43		25.0	66.4		mg/L		96	80 - 120
Fluoride	0.56		5.00	5.12		mg/L		91	80 - 120
Sulfate	2.0	J	25.0	26.3		mg/L		97	80 - 120

Lab Sample ID: 280-90803-11 MSD
Matrix: Water
Analysis Batch: 354366

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	43		25.0	66.5		mg/L		96	80 - 120	0	20
Fluoride	0.56		5.00	5.15		mg/L		92	80 - 120	1	20
Sulfate	2.0	J	25.0	27.4		mg/L		101	80 - 120	4	20

Lab Sample ID: 280-90803-1 DU
Matrix: Water
Analysis Batch: 354366

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	76		75.8		mg/L		0.1	15
Fluoride	1.1		1.05		mg/L		0.7	15
Sulfate	52		51.5		mg/L		0.09	15

Lab Sample ID: 280-90803-11 DU
Matrix: Water
Analysis Batch: 354366

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	43		42.5		mg/L		0.09	15
Fluoride	0.56		0.535		mg/L		4	15
Sulfate	2.0	J	2.07	J	mg/L		4	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-351302/1
Matrix: Water
Analysis Batch: 351302

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/14/16 10:35	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 280-351302/2
Matrix: Water
Analysis Batch: 351302

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	494		mg/L		99	86 - 110

Lab Sample ID: MB 280-351743/1
Matrix: Water
Analysis Batch: 351743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/16/16 10:49	1

Lab Sample ID: LCS 280-351743/2
Matrix: Water
Analysis Batch: 351743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	488		mg/L		97	86 - 110

Lab Sample ID: MB 280-351974/1
Matrix: Water
Analysis Batch: 351974

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/17/16 11:39	1

Lab Sample ID: LCS 280-351974/2
Matrix: Water
Analysis Batch: 351974

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	486		mg/L		97	86 - 110

Lab Sample ID: LCSD 280-351974/3
Matrix: Water
Analysis Batch: 351974

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	478		mg/L		95	86 - 110	2	20

Lab Sample ID: 280-90803-1 DU
Matrix: Water
Analysis Batch: 351974

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	410		412		mg/L		1	10

Lab Sample ID: 280-90803-9 DU
Matrix: Water
Analysis Batch: 351974

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	1200		1220		mg/L		0.5	10

Lab Sample ID: MB 280-353257/1
Matrix: Water
Analysis Batch: 353257

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/28/16 09:00	1

Lab Sample ID: LCS 280-353257/2
Matrix: Water
Analysis Batch: 353257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	495		mg/L		99	86 - 110

Lab Sample ID: LCSD 280-353257/3
Matrix: Water
Analysis Batch: 353257

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	500	489		mg/L		98	86 - 110	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-351379/2
Matrix: Water
Analysis Batch: 351379

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			11/14/16 16:05	1

Lab Sample ID: LCS 280-351379/1
Matrix: Water
Analysis Batch: 351379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	93.6		mg/L		94	86 - 114

Lab Sample ID: 280-90803-4 DU
Matrix: Water
Analysis Batch: 351379

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	36		36.0		mg/L		1	10

Lab Sample ID: MB 280-351845/2
Matrix: Water
Analysis Batch: 351845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			11/16/16 17:00	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 280-351845/1
Matrix: Water
Analysis Batch: 351845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	92.4		mg/L		92	86 - 114

Lab Sample ID: 280-90803-1 DU
Matrix: Water
Analysis Batch: 351845

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	5.6		5.20		mg/L		7	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-279961/1-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 279961

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2194	U	0.253	0.253	1.00	0.410	pCi/L	11/18/16 11:09	12/20/16 21:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.3*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:46*	*1*

Lab Sample ID: LCS 160-279961/2-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 279961

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.1	14.27		1.87	1.00	0.469	pCi/L	129	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*69.5*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-279988/1-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 279988

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2629	U	0.253	0.254	1.00	0.410	pCi/L	11/18/16 11:44	12/20/16 16:37	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.3*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:37*	*1*
Y Carrier	*87.1*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:37*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-279988/2-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 279988

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.1	17.07		1.86	1.00	0.444	pCi/L	121	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*69.5*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

Metals

Prep Batch: 255797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total Recoverable	Water	3005A	
280-90803-2	MW-7	Total Recoverable	Water	3005A	
280-90803-3	MW-1	Total Recoverable	Water	3005A	
280-90803-4	MW-3	Total Recoverable	Water	3005A	
280-90803-5	MW-4	Total Recoverable	Water	3005A	
280-90803-6	MW-6	Total Recoverable	Water	3005A	
280-90803-7	MW-8	Total Recoverable	Water	3005A	
280-90803-8	MW-9	Total Recoverable	Water	3005A	
280-90803-9	MW-10	Total Recoverable	Water	3005A	
280-90803-10	MW-11	Total Recoverable	Water	3005A	
280-90803-11	MW-12	Total Recoverable	Water	3005A	
280-90803-12	MW-12D	Total Recoverable	Water	3005A	
280-90803-13	MW-12EB	Total Recoverable	Water	3005A	
MB 240-255797/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-255797/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-255797/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-90803-1 MS	MW-1P	Total Recoverable	Water	3005A	
280-90803-1 MS	MW-1P	Total Recoverable	Water	3005A	
280-90803-1 MSD	MW-1P	Total Recoverable	Water	3005A	
280-90803-1 MSD	MW-1P	Total Recoverable	Water	3005A	

Analysis Batch: 255975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total Recoverable	Water	6010C	255797
280-90803-2	MW-7	Total Recoverable	Water	6010C	255797
280-90803-3	MW-1	Total Recoverable	Water	6010C	255797
280-90803-4	MW-3	Total Recoverable	Water	6010C	255797
280-90803-5	MW-4	Total Recoverable	Water	6010C	255797
280-90803-6	MW-6	Total Recoverable	Water	6010C	255797
280-90803-7	MW-8	Total Recoverable	Water	6010C	255797
280-90803-8	MW-9	Total Recoverable	Water	6010C	255797
280-90803-9	MW-10	Total Recoverable	Water	6010C	255797
280-90803-10	MW-11	Total Recoverable	Water	6010C	255797
280-90803-11	MW-12	Total Recoverable	Water	6010C	255797
280-90803-12	MW-12D	Total Recoverable	Water	6010C	255797
280-90803-13	MW-12EB	Total Recoverable	Water	6010C	255797
MB 240-255797/1-A	Method Blank	Total Recoverable	Water	6010C	255797
LCS 240-255797/2-A	Lab Control Sample	Total Recoverable	Water	6010C	255797
280-90803-1 MS	MW-1P	Total Recoverable	Water	6010C	255797
280-90803-1 MSD	MW-1P	Total Recoverable	Water	6010C	255797

Analysis Batch: 256064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total Recoverable	Water	6020A	255797
280-90803-2	MW-7	Total Recoverable	Water	6020A	255797
280-90803-3	MW-1	Total Recoverable	Water	6020A	255797
280-90803-4	MW-3	Total Recoverable	Water	6020A	255797
280-90803-5	MW-4	Total Recoverable	Water	6020A	255797
280-90803-6	MW-6	Total Recoverable	Water	6020A	255797
280-90803-7	MW-8	Total Recoverable	Water	6020A	255797
280-90803-8	MW-9	Total Recoverable	Water	6020A	255797

Metals (Continued)

Analysis Batch: 256064 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-9	MW-10	Total Recoverable	Water	6020A	255797
280-90803-10	MW-11	Total Recoverable	Water	6020A	255797
280-90803-11	MW-12	Total Recoverable	Water	6020A	255797
280-90803-12	MW-12D	Total Recoverable	Water	6020A	255797
280-90803-13	MW-12EB	Total Recoverable	Water	6020A	255797
MB 240-255797/1-A	Method Blank	Total Recoverable	Water	6020A	255797
LCS 240-255797/3-A	Lab Control Sample	Total Recoverable	Water	6020A	255797
280-90803-1 MS	MW-1P	Total Recoverable	Water	6020A	255797
280-90803-1 MSD	MW-1P	Total Recoverable	Water	6020A	255797

Analysis Batch: 256243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-4	MW-3	Total Recoverable	Water	6020A	255797
280-90803-6	MW-6	Total Recoverable	Water	6020A	255797
280-90803-7	MW-8	Total Recoverable	Water	6020A	255797
280-90803-8	MW-9	Total Recoverable	Water	6020A	255797
280-90803-9	MW-10	Total Recoverable	Water	6020A	255797
280-90803-10	MW-11	Total Recoverable	Water	6020A	255797
280-90803-11	MW-12	Total Recoverable	Water	6020A	255797
280-90803-12	MW-12D	Total Recoverable	Water	6020A	255797
280-90803-13	MW-12EB	Total Recoverable	Water	6020A	255797

Analysis Batch: 256382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-6	MW-6	Total Recoverable	Water	6020A	255797
280-90803-7	MW-8	Total Recoverable	Water	6020A	255797
280-90803-8	MW-9	Total Recoverable	Water	6020A	255797
280-90803-9	MW-10	Total Recoverable	Water	6020A	255797
280-90803-10	MW-11	Total Recoverable	Water	6020A	255797
280-90803-11	MW-12	Total Recoverable	Water	6020A	255797
280-90803-12	MW-12D	Total Recoverable	Water	6020A	255797
280-90803-13	MW-12EB	Total Recoverable	Water	6020A	255797

Prep Batch: 353247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	7470A	
280-90803-2	MW-7	Total/NA	Water	7470A	
280-90803-3	MW-1	Total/NA	Water	7470A	
280-90803-4	MW-3	Total/NA	Water	7470A	
280-90803-5	MW-4	Total/NA	Water	7470A	
280-90803-6	MW-6	Total/NA	Water	7470A	
280-90803-7	MW-8	Total/NA	Water	7470A	
280-90803-8	MW-9	Total/NA	Water	7470A	
280-90803-9	MW-10	Total/NA	Water	7470A	
280-90803-10	MW-11	Total/NA	Water	7470A	
280-90803-11	MW-12	Total/NA	Water	7470A	
280-90803-12	MW-12D	Total/NA	Water	7470A	
280-90803-13	MW-12EB	Total/NA	Water	7470A	
MB 280-353247/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-353247/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-90803-1 MS	MW-1P	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 353247 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1 MSD	MW-1P	Total/NA	Water	7470A	

Analysis Batch: 353825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	7470A	353247
280-90803-2	MW-7	Total/NA	Water	7470A	353247
280-90803-3	MW-1	Total/NA	Water	7470A	353247
280-90803-4	MW-3	Total/NA	Water	7470A	353247
280-90803-5	MW-4	Total/NA	Water	7470A	353247
280-90803-6	MW-6	Total/NA	Water	7470A	353247
280-90803-7	MW-8	Total/NA	Water	7470A	353247
280-90803-8	MW-9	Total/NA	Water	7470A	353247
280-90803-9	MW-10	Total/NA	Water	7470A	353247
280-90803-10	MW-11	Total/NA	Water	7470A	353247
280-90803-11	MW-12	Total/NA	Water	7470A	353247
280-90803-12	MW-12D	Total/NA	Water	7470A	353247
280-90803-13	MW-12EB	Total/NA	Water	7470A	353247
MB 280-353247/1-A	Method Blank	Total/NA	Water	7470A	353247
LCS 280-353247/2-A	Lab Control Sample	Total/NA	Water	7470A	353247
280-90803-1 MS	MW-1P	Total/NA	Water	7470A	353247
280-90803-1 MSD	MW-1P	Total/NA	Water	7470A	353247

General Chemistry

Analysis Batch: 351302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-4	MW-3	Total/NA	Water	SM 2540C	
MB 280-351302/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-351302/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 351379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-4	MW-3	Total/NA	Water	SM 2540D	
MB 280-351379/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-351379/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-90803-4 DU	MW-3	Total/NA	Water	SM 2540D	

Analysis Batch: 351743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-11	MW-12	Total/NA	Water	SM 2540C	
280-90803-12	MW-12D	Total/NA	Water	SM 2540C	
280-90803-13	MW-12EB	Total/NA	Water	SM 2540C	
MB 280-351743/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-351743/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 351845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	SM 2540D	
280-90803-2	MW-7	Total/NA	Water	SM 2540D	
280-90803-3	MW-1	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 351845 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-5	MW-4	Total/NA	Water	SM 2540D	
280-90803-6	MW-6	Total/NA	Water	SM 2540D	
280-90803-7	MW-8	Total/NA	Water	SM 2540D	
280-90803-8	MW-9	Total/NA	Water	SM 2540D	
280-90803-9	MW-10	Total/NA	Water	SM 2540D	
280-90803-10	MW-11	Total/NA	Water	SM 2540D	
280-90803-11	MW-12	Total/NA	Water	SM 2540D	
280-90803-12	MW-12D	Total/NA	Water	SM 2540D	
280-90803-13	MW-12EB	Total/NA	Water	SM 2540D	
MB 280-351845/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-351845/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-90803-1 DU	MW-1P	Total/NA	Water	SM 2540D	

Analysis Batch: 351913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-9	MW-10	Total/NA	Water	9040B	
LCS 280-351913/29	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 351974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	SM 2540C	
280-90803-2	MW-7	Total/NA	Water	SM 2540C	
280-90803-3	MW-1	Total/NA	Water	SM 2540C	
280-90803-6	MW-6	Total/NA	Water	SM 2540C	
280-90803-8	MW-9	Total/NA	Water	SM 2540C	
280-90803-9	MW-10	Total/NA	Water	SM 2540C	
280-90803-10	MW-11	Total/NA	Water	SM 2540C	
MB 280-351974/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-351974/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-351974/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
280-90803-1 DU	MW-1P	Total/NA	Water	SM 2540C	
280-90803-9 DU	MW-10	Total/NA	Water	SM 2540C	

Analysis Batch: 353200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	9040B	
280-90803-2	MW-7	Total/NA	Water	9040B	
280-90803-3	MW-1	Total/NA	Water	9040B	
280-90803-4	MW-3	Total/NA	Water	9040B	
280-90803-5	MW-4	Total/NA	Water	9040B	
280-90803-6	MW-6	Total/NA	Water	9040B	
280-90803-7	MW-8	Total/NA	Water	9040B	
280-90803-8	MW-9	Total/NA	Water	9040B	
LCS 280-353200/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 353257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-5	MW-4	Total/NA	Water	SM 2540C	
280-90803-7	MW-8	Total/NA	Water	SM 2540C	
MB 280-353257/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-353257/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 353257 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-353257/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 353774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-10	MW-11	Total/NA	Water	9040B	
280-90803-11	MW-12	Total/NA	Water	9040B	
280-90803-12	MW-12D	Total/NA	Water	9040B	
LCS 280-353774/4	Lab Control Sample	Total/NA	Water	9040B	
280-90803-10 DU	MW-11	Total/NA	Water	9040B	

Analysis Batch: 354137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-13	MW-12EB	Total/NA	Water	9040B	
LCS 280-354137/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 354156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-4	MW-3	Total/NA	Water	9056A	
280-90803-4	MW-3	Total/NA	Water	9056A	
MB 280-354156/6	Method Blank	Total/NA	Water	9056A	
LCS 280-354156/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-354156/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-354156/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 354366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	9056A	
280-90803-2	MW-7	Total/NA	Water	9056A	
280-90803-3	MW-1	Total/NA	Water	9056A	
280-90803-3	MW-1	Total/NA	Water	9056A	
280-90803-5	MW-4	Total/NA	Water	9056A	
280-90803-5	MW-4	Total/NA	Water	9056A	
280-90803-5	MW-4	Total/NA	Water	9056A	
280-90803-6	MW-6	Total/NA	Water	9056A	
280-90803-6	MW-6	Total/NA	Water	9056A	
280-90803-7	MW-8	Total/NA	Water	9056A	
280-90803-7	MW-8	Total/NA	Water	9056A	
280-90803-8	MW-9	Total/NA	Water	9056A	
280-90803-8	MW-9	Total/NA	Water	9056A	
280-90803-9	MW-10	Total/NA	Water	9056A	
280-90803-9	MW-10	Total/NA	Water	9056A	
280-90803-10	MW-11	Total/NA	Water	9056A	
280-90803-10	MW-11	Total/NA	Water	9056A	
280-90803-11	MW-12	Total/NA	Water	9056A	
280-90803-12	MW-12D	Total/NA	Water	9056A	
280-90803-13	MW-12EB	Total/NA	Water	9056A	
MB 280-354366/6	Method Blank	Total/NA	Water	9056A	
LCS 280-354366/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-354366/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-354366/3	Lab Control Sample	Total/NA	Water	9056A	
280-90803-1 MS	MW-1P	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 354366 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1 MSD	MW-1P	Total/NA	Water	9056A	
280-90803-11 MS	MW-12	Total/NA	Water	9056A	
280-90803-11 MSD	MW-12	Total/NA	Water	9056A	
280-90803-1 DU	MW-1P	Total/NA	Water	9056A	
280-90803-11 DU	MW-12	Total/NA	Water	9056A	

Rad

Prep Batch: 279961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	PrecSep-21	
280-90803-2	MW-7	Total/NA	Water	PrecSep-21	
280-90803-3	MW-1	Total/NA	Water	PrecSep-21	
280-90803-4	MW-3	Total/NA	Water	PrecSep-21	
280-90803-5	MW-4	Total/NA	Water	PrecSep-21	
280-90803-6	MW-6	Total/NA	Water	PrecSep-21	
280-90803-7	MW-8	Total/NA	Water	PrecSep-21	
280-90803-8	MW-9	Total/NA	Water	PrecSep-21	
280-90803-9	MW-10	Total/NA	Water	PrecSep-21	
280-90803-10	MW-11	Total/NA	Water	PrecSep-21	
280-90803-11	MW-12	Total/NA	Water	PrecSep-21	
280-90803-12	MW-12D	Total/NA	Water	PrecSep-21	
280-90803-13	MW-12EB	Total/NA	Water	PrecSep-21	
MB 160-279961/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-279961/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 279988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90803-1	MW-1P	Total/NA	Water	PrecSep_0	
280-90803-2	MW-7	Total/NA	Water	PrecSep_0	
280-90803-3	MW-1	Total/NA	Water	PrecSep_0	
280-90803-4	MW-3	Total/NA	Water	PrecSep_0	
280-90803-5	MW-4	Total/NA	Water	PrecSep_0	
280-90803-6	MW-6	Total/NA	Water	PrecSep_0	
280-90803-7	MW-8	Total/NA	Water	PrecSep_0	
280-90803-8	MW-9	Total/NA	Water	PrecSep_0	
280-90803-9	MW-10	Total/NA	Water	PrecSep_0	
280-90803-10	MW-11	Total/NA	Water	PrecSep_0	
280-90803-11	MW-12	Total/NA	Water	PrecSep_0	
280-90803-12	MW-12D	Total/NA	Water	PrecSep_0	
280-90803-13	MW-12EB	Total/NA	Water	PrecSep_0	
MB 160-279988/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-279988/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Client Sample ID: MW-1P

Date Collected: 11/10/16 10:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 15:39	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/16/16 16:12	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:21	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:27	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 14:57	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.05 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284552	12/20/16 21:48	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.05 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284552	12/20/16 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 11/10/16 09:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:16	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 00:50	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:28	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:31	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 15:15	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.88 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284552	12/20/16 21:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.88 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:39	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-1

Date Collected: 11/10/16 12:10
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:20	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 00:54	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:30	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:35	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 15:33	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	354366	12/06/16 20:21	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.66 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284552	12/20/16 21:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.66 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:40	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-3

Date Collected: 11/07/16 15:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:24	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 00:58	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		2			256243	11/17/16 22:10	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:32	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:39	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354156	12/04/16 10:48	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	354156	12/04/16 19:56	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	351302	11/14/16 10:35	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351379	11/14/16 16:05	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.15 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284552	12/20/16 21:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			1000.15 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:40	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Client Sample ID: MW-4

Date Collected: 11/10/16 12:55
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:29	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:03	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:34	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:43	MMC	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	354366	12/06/16 16:08	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	354366	12/06/16 20:57	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	354366	12/06/16 23:02	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	353257	11/28/16 09:00	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.05 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284552	12/20/16 21:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.05 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:44	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:33	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:15	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:14	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 16:57	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:41	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:47	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 16:26	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	354366	12/06/16 16:44	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.70 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:56	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.70 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:44	MLK	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Client Sample ID: MW-6

Date Collected: 11/10/16 14:00
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 11/10/16 11:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:38	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:19	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:18	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:01	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:43	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353200	11/27/16 12:51	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 17:37	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	354366	12/06/16 21:51	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	353257	11/28/16 09:00	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.25 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:56	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:44	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 11/10/16 11:53
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:42	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:23	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:22	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:05	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:45	CDH	TAL DEN

Lab Chronicle

Client: HDR Inc
TestAmerica Job ID: 280-90803-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9040B		1			353200	11/27/16 12:56	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 17:55	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	354366	12/06/16 23:20	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.57 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:56	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.57 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:44	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-10
Date Collected: 11/10/16 13:40
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:55	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:28	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:26	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:09	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:48	CDH	TAL DEN
Total/NA	Analysis	9040B		1			351913	11/16/16 16:30	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 18:13	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	354366	12/06/16 23:37	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.41 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:56	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.41 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:41	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-11
Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 16:59	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:32	AS1	TAL CAN

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Client Sample ID: MW-11

Date Collected: 11/10/16 15:15
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:30	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:14	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:50	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353774	11/30/16 12:45	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 18:31	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	354366	12/06/16 23:55	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351974	11/17/16 11:39	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.32 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:57	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.32 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:41	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 17:03	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:36	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:34	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:18	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:52	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353774	11/30/16 12:55	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 14:04	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351743	11/16/16 10:49	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.04 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:57	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.04 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:41	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-12D

Date Collected: 11/09/16 11:45
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 17:07	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:40	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:39	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:22	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:54	CDH	TAL DEN
Total/NA	Analysis	9040B		1			353774	11/30/16 13:00	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 14:21	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351743	11/16/16 10:49	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.07 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:57	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.07 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:41	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Client Sample ID: MW-12EB

Date Collected: 11/09/16 12:30
Date Received: 11/10/16 16:15

Lab Sample ID: 280-90803-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			255975	11/16/16 17:12	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256064	11/17/16 01:44	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256243	11/17/16 22:43	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	255797	11/15/16 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			256382	11/18/16 17:26	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	353247	11/30/16 11:37	CDH	TAL DEN
Total/NA	Analysis	7470A		1			353825	11/30/16 20:57	CDH	TAL DEN
Total/NA	Analysis	9040B		1			354137	12/01/16 13:28	MMC	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	354366	12/06/16 14:39	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	351743	11/16/16 10:49	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	351845	11/16/16 17:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.51 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	9315		1			284694	12/20/16 21:57	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.51 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	9320		1			284694	12/20/16 16:41	MLK	TAL SL

Lab Chronicle

Client: HDR Inc
TestAmerica Job ID: 280-90803-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			285034	12/21/16 15:05	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Louisiana (DW)	NELAP	6	LA160008	12-31-16 *
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Travis Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-638-2888(Tel)~~ 303-351-2139	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

280-90803 Chain of Custody

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	D	N	N	D		
~~Unit 6 MW-1~~ MW-1P	11/10/16	1040	G	Water		N	X	X	X	X	X	7	
MW-7	11/10/16	0955	G	Water		N	X	X	X	X	X	7	
MW-1	11/10/16	1210	G	Water		N	X	X	X	X	X	7	
MW-3	11/7/16	1545	G	Water		N	X	X	X	X	X	7	
MW-4	11/10/16	1255	G	Water		N	X	X	X	X	X	7	
MW-6	11/10/16	1400	G	Water		N	X	X	X	X	X	7	
MW-8	11/10/16	1115	G	Water		N	X	X	X	X	X	7	
MW-9	11/10/16	1153	G	Water		N	X	X	X	X	X	7	
MW-10	11/10/16	1340	G	Water		N	X	X	X	X	X	7	
MW-11	11/10/16	1515	G	Water		N	X	X	X	X	X	7	
MW-12	11/9/16	1145	G	Water		N	X	X	X	X	X	7	

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Travis Snyder	Date/Time: 11/10/16 1650	Company: HDR	Received by: [signature]	Date/Time: 11/10/16 1650	Company: TAD
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 8.3, 8.2, 13.8, 3.8 IR5 0.0 Transfered NCB 11/11/16

12/22/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Travis Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-688-2300(Tel)~~ 303-351-2139	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228										Total Number of containers	Special Instructions/Note:
			Preservation Code:		N	N	D	D	N	N	D											
~~Field Duplicate~~ MW-12D	11/9/16	1145	G	Water		N	X	X	X	X	X											
~~Equipment Blank~~ MW-12EB	11/9/16	1230	G	Water		N	X	X	X	X	X											

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12/22/2016

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Travis Snyder	11/10/16 1650	HDR		11/10/16 1650	TAD
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-90803 Chain of Custody

estAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie	COC No: 280-377233.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA	Page: Page 1 of 2
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/12/2016		Job #: 280-90803-1
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Xcel Energy CCR - Valmont Station	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1P (280-90803-1)	11/10/16	10:40 Mountain		Water			X	X	X	2	
MW-7 (280-90803-2)	11/10/16	09:55 Mountain		Water			X	X	X	2	
MW-1 (280-90803-3)	11/10/16	12:10 Mountain		Water			X	X	X	2	
MW-3 (280-90803-4)	11/7/16	15:45 Mountain		Water			X	X	X	2	
MW-4 (280-90803-5)	11/10/16	12:55 Mountain		Water			X	X	X	2	
MW-6 (280-90803-6)	11/10/16	14:00 Mountain		Water			X	X	X	2	
MW-8 (280-90803-7)	11/10/16	11:15 Mountain		Water			X	X	X	2	
MW-9 (280-90803-8)	11/10/16	11:53 Mountain		Water			X	X	X	2	
MW-10 (280-90803-9)	11/10/16	13:40 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 11/11/16 15:30	Company	Received by:	Date/Time: 11.12.16 0815	Company TASR	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

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

12/22/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-377233.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-90803-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/12/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-11 (280-90803-10)	11/10/16	15:15 Mountain		Water			X	X	X	2	
MW-12 (280-90803-11)	11/9/16	11:45 Mountain		Water			X	X	X	2	
MW-12D (280-90803-12)	11/9/16	11:45 Mountain		Water			X	X	X	2	
MW-12EB (280-90803-13)	11/9/16	12:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		11/11/16 1530			11.12.16 0815	TASR
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

12/22/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-90803 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K		7469.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-90803-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/12/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-12EB (280-90803-13)	11/9/16	12:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by: SC	Date/Time: 11-17-16 1620	Company TAD	Received by:	Date/Time: 11/17/16 0915	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

12/22/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

1.4/C1.8

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-377232.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-90803-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 12/7/2016			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							871
MW-1P (280-90803-1)	11/10/16	10:40 Mountain		Water			X	X	1	, Use Collision Cell
MW-7 (280-90803-2)	11/10/16	09:55 Mountain		Water			X	X	1	Use Collision Cell
MW-1 (280-90803-3)	11/10/16	12:10 Mountain		Water			X	X	1	, Use Collision Cell
MW-3 (280-90803-4)	11/7/16	15:45 Mountain		Water			X	X	1	Use Collision Cell
MW-4 (280-90803-5)	11/10/16	12:55 Mountain		Water			X	X	1	, Use Collision Cell
MW-6 (280-90803-6)	11/10/16	14:00 Mountain		Water			X	X	1	Use Collision Cell
MW-8 (280-90803-7)	11/10/16	11:15 Mountain		Water			X	X	1	, Use Collision Cell
MW-9 (280-90803-8)	11/10/16	11:53 Mountain		Water			X	X	1	Use Collision Cell
MW-10 (280-90803-9)	11/10/16	13:40 Mountain		Water			X	X	1	, Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		11/11/16 15:30			11-12-16 945	TA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

12/22/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

1.4 | C1.B

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-377232.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-90803-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 12/7/2016			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							571
MW-11 (280-90803-10)	11/10/16	15:15 Mountain		Water			X	X	1	Use Collision Cell
MW-12 (280-90803-11)	11/9/16	11:45 Mountain		Water			X	X	1	, Use Collision Cell
MW-12D (280-90803-12)	11/9/16	11:45 Mountain		Water			X	X	1	Use Collision Cell
MW-12EB (280-90803-13)	11/9/16	12:30 Mountain		Water			X	X	1	, Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/11/16 15:30			12-9-16 9:45	TA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

12/22/2016

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client Denver Site Name _____ Cooler unpacked by:

Cooler Received on 11-12-16 Opened on 11-14-16

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF **+0.4** °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp. 1.8 °C
   IR GUN #36 (CF **+1.3**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC682547**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

17. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

Ref: SOP NC-SC-0005, Sample Receiving
L:\QAQC\QA Department\QA TARDIS\Document Control\Work Instructions\In Revision\WI-NC-099-101216 Cooler Receipt Form.doc djl

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-90803-1

Login Number: 90803
List Number: 1
Creator: Kovitch, Christina M

List Source: TestAmerica Denver

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.	True	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-90803-1

Login Number: 90803
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 11/12/16 01:10 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6, 1.7
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?	False	
There are no discrepancies between the containers received and the COC.	False	Only received 1 bottle for #12 and no bottles for #13
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-90803-1

Login Number: 90803
List Number: 4
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 11/15/16 05:21 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4,2.0
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-90803-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-90803-1	MW-1P	83.8
280-90803-2	MW-7	80.1
280-90803-3	MW-1	72.6
280-90803-4	MW-3	78.1
280-90803-5	MW-4	79.5
280-90803-6	MW-6	72.9
280-90803-7	MW-8	85.5
280-90803-8	MW-9	68.9
280-90803-9	MW-10	55.6
280-90803-10	MW-11	79.5
280-90803-11	MW-12	86.3
280-90803-12	MW-12D	72.6
280-90803-13	MW-12EB	70.1
LCS 160-279961/2-A	Lab Control Sample	69.5
MB 160-279961/1-A	Method Blank	84.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-90803-1	MW-1P	83.8	83.0
280-90803-2	MW-7	80.1	81.1
280-90803-3	MW-1	72.6	86.4
280-90803-4	MW-3	78.1	84.5
280-90803-5	MW-4	79.5	74.0
280-90803-6	MW-6	72.9	83.0
280-90803-7	MW-8	85.5	81.5
280-90803-8	MW-9	68.9	82.6
280-90803-9	MW-10	55.6	86.4
280-90803-10	MW-11	79.5	87.9
280-90803-11	MW-12	86.3	84.5
280-90803-12	MW-12D	72.6	73.3
280-90803-13	MW-12EB	70.1	82.2
LCS 160-279988/2-A	Lab Control Sample	69.5	87.5
MB 160-279988/1-A	Method Blank	84.3	87.1

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-94371-1

Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Stephanie Rothmeyer

Authorized for release by:
3/30/2017 11:00:38 AM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

LINKS

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Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Job ID: 280-94371-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-94371-1

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.

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.

RECEIPT

The samples were received on 3/2/2017 at 11:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.4º C, 0.6º C, 2.1º C and 4.3º C.

TOTAL RECOVERABLE METALS

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 03/07/2017 and analyzed on 03/08/2017.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/07/2017 and analyzed on 03/08/2017 and 03/09/2017.

Barium and Calcium were detected in method blank MB 240-269539/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium failed the recovery criteria high for the MSD of sample MW-1P (280-94371-1) in batch 240-269812. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Sample MW-3 (280-94371-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A.

Job ID: 280-94371-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

The samples were prepared and analyzed on 03/21/2017.

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

TOTAL DISSOLVED SOLIDS

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 03/03/2017 and 03/07/2017.

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

TOTAL SUSPENDED SOLIDS

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 03/06/2017.

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

CORROSIVITY (PH)

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 03/03/2017 and 03/08/2017.

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

ANIONS (28 DAYS)

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 03/03/2017 and 03/04/2017.

Chloride and Sulfate were detected in method blank MB 280-364233/13 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples MW-1 (280-94371-3)[5X], MW-3 (280-94371-4)[50X], MW-4 (280-94371-5)[2X], MW-4 (280-94371-5)[50X], MW-6 (280-94371-6)[10X], MW-8 (280-94371-7)[50X], MW-9 (280-94371-8)[10X], MW-10 (280-94371-9)[10X] and MW-11 (280-94371-10)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 03/07/2017 and analyzed on 03/29/2017.

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

RADIUM-228

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11),

Job ID: 280-94371-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 03/07/2017 and analyzed on 03/22/2017.

Radium-228 exceeded the RPD limit for the duplicate of sample 240-76215-2. Refer to the QC report for details.

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-1P (280-94371-1), MW-7 (280-94371-2), MW-1 (280-94371-3), MW-3 (280-94371-4), MW-4 (280-94371-5), MW-6 (280-94371-6), MW-8 (280-94371-7), MW-9 (280-94371-8), MW-10 (280-94371-9), MW-11 (280-94371-10), MW-12 (280-94371-11), MW-1PD (280-94371-12) and MW-10EB (280-94371-13) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 03/30/2017.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-1P — Lab Sample ID: 280-94371-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.74		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.0013	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0037	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.14	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	73	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00056	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00038	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.014		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00023	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00065	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.0035	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	74	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.85		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	46	B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	380		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 280-94371-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.36		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.0023		0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.00089	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.025	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	52	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00063	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0011	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0045	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00090	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.0032	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.042		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-94371-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	23.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	44	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.40	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	120	B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	580		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-94371-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.46		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00078	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0016	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.076	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	91	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.00042	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0016	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.041		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00056	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00079	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.035		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	62	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.38	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	280	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	900		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-94371-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.6		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00028	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.00056	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.014	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	550	B	2.0	0.086	mg/L	2		6020A	Total Recoverable
Cobalt	0.00060	J	0.0010	0.00013	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-3 (Continued) — Lab Sample ID: 280-94371-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.00035	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0012	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00032	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00073	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.085		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	40	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.13	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2100	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-94371-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.3		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00037	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.022		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.024	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	370	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0019		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0031		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.017		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0020		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.28		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.23		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	400	B	150	13	mg/L	50		9056A	Total/NA
Fluoride	3.3		1.0	0.12	mg/L	2		9056A	Total/NA
Sulfate	5500	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9100		100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	49		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-94371-6

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued) — Lab Sample ID: 280-94371-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.50		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00029	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0037	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.081	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	320	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0023		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0085		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0017	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0058		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.019		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.064		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	500	B	30	2.5	mg/L	10		9056A	Total/NA
Fluoride	0.11	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	490	B	50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1900		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	93		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-94371-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.91		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00031	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0025	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.038	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	500	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0021		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0055		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.00081	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0026		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.12		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-8 (Continued) — Lab Sample ID: 280-94371-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	23.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.14	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2300	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	160		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-94371-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	13		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0016	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.048	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	130	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0097		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00035	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.16		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00032	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00064	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.027		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	54	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.3		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	510	B	50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	13		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-94371-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	17		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0013	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.054	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	130	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0088		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00034	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.23		0.010	0.00051	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 280-94371-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.00027	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Lithium	0.037		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	58	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.0		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	570	B	50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1200		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-94371-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.5		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0075		0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.088	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	150	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.027		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.00029	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.024		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00081	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Lithium	0.023		0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	58	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	1.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	340	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1000		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-94371-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.8		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0039	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.084	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	180	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0099		0.0010	0.00013	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-12 (Continued) — Lab Sample ID: 280-94371-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.00079	J	0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0034	J	0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.00047	J	0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Lithium	0.0020	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	38	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.33	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	1.5	J B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	940		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	28		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1PD — Lab Sample ID: 280-94371-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.71		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00031	J	0.0020	0.00027	mg/L	1		6020A	Total Recoverable
Arsenic	0.0047	J	0.0050	0.00035	mg/L	1		6020A	Total Recoverable
Barium	0.23	B	0.0050	0.00052	mg/L	1		6020A	Total Recoverable
Calcium	75	B	1.0	0.043	mg/L	1		6020A	Total Recoverable
Cobalt	0.0022		0.0010	0.00013	mg/L	1		6020A	Total Recoverable
Chromium	0.0043		0.0020	0.00026	mg/L	1		6020A	Total Recoverable
Molybdenum	0.013		0.010	0.00051	mg/L	1		6020A	Total Recoverable
Lead	0.0020		0.0010	0.00016	mg/L	1		6020A	Total Recoverable
Selenium	0.00075	J	0.0050	0.00048	mg/L	1		6020A	Total Recoverable
Lithium	0.0061	J	0.0080	0.00016	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	75	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.82		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	45	B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	410		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10EB — Lab Sample ID: 280-94371-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	6.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-10EB (Continued)

Lab Sample ID: 280-94371-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	0.59	J B	3.0	0.25	mg/L	1		9056A	Total/NA
Sulfate	0.38	J B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	9.0	J	10	4.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-94371-1	MW-1P	Water	02/28/17 14:30	03/02/17 11:45
280-94371-2	MW-7	Water	02/27/17 17:05	03/02/17 11:45
280-94371-3	MW-1	Water	02/27/17 15:15	03/02/17 11:45
280-94371-4	MW-3	Water	02/27/17 13:45	03/02/17 11:45
280-94371-5	MW-4	Water	03/02/17 10:00	03/02/17 11:45
280-94371-6	MW-6	Water	03/01/17 15:55	03/02/17 11:45
280-94371-7	MW-8	Water	03/01/17 15:05	03/02/17 11:45
280-94371-8	MW-9	Water	02/28/17 16:25	03/02/17 11:45
280-94371-9	MW-10	Water	03/01/17 10:25	03/02/17 11:45
280-94371-10	MW-11	Water	03/01/17 12:25	03/02/17 11:45
280-94371-11	MW-12	Water	03/01/17 13:40	03/02/17 11:45
280-94371-12	MW-1PD	Water	02/28/17 14:30	03/02/17 11:45
280-94371-13	MW-10EB	Water	03/01/17 11:00	03/02/17 11:45

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.74		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 16:43	1

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.36		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:13	1

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.46		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:18	1

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:22	1

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:27	1

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.50		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:32	1

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.91		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:37	1

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	13		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:41	1

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	17		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:46	1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45
Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.5		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 17:59	1

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45
Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.8		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 18:03	1

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45
Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.71		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 18:08	1

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45
Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 18:12	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45
Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0013	J	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:03	1
Arsenic	0.0037	J	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:03	1
Barium	0.14	B	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:03	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:03	1
Calcium	73	B	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:03	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:03	1
Cobalt	0.00056	J	0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:03	1
Chromium	0.00038	J	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:03	1
Molybdenum	0.014		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:03	1
Lead	0.00023	J	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:03	1
Selenium	0.00065	J	0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:03	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:03	1
Lithium	0.0035	J	0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:03	1

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45
Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0023		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:23	1
Arsenic	0.00089	J	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:23	1
Barium	0.025	B	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:23	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:23	1
Calcium	52	B	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:23	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:23	1
Cobalt	0.00063	J	0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:23	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.0011	J	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:23	1
Molybdenum	0.0045	J	0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:23	1
Lead	0.00090	J	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:23	1
Selenium	0.0032	J	0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:23	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:23	1
Lithium	0.042		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:23	1

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00078	J	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:36	1
Arsenic	0.0016	J	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:36	1
Barium	0.076	B	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:36	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:36	1
Calcium	91	B	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:36	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:36	1
Cobalt	0.00042	J	0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:36	1
Chromium	0.0016	J	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:36	1
Molybdenum	0.041		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:36	1
Lead	0.00056	J	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:36	1
Selenium	0.00079	J	0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:36	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:36	1
Lithium	0.035		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:36	1

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00028	J	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:40	1
Arsenic	0.00056	J	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:40	1
Barium	0.014	B	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:40	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:40	1
Calcium	550	B	2.0	0.086	mg/L		03/07/17 14:00	03/09/17 11:58	2
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:40	1
Cobalt	0.00060	J	0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:40	1
Chromium	0.00035	J	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:40	1
Molybdenum	0.0012	J	0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:40	1
Lead	0.00032	J	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:40	1
Selenium	0.00073	J	0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:40	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:40	1
Lithium	0.085		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:40	1

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00037	J	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:44	1
Arsenic	0.022		0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:44	1
Barium	0.024	B	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:44	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:44	1
Calcium	**370**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:44	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:44	1
Cobalt	**0.0019**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:44	1
Chromium	**0.0031**		0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:44	1
Molybdenum	**0.017**		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:44	1
Lead	**0.0020**		0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:44	1
Selenium	**0.28**		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:44	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:44	1
Lithium	**0.23**		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:44	1

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00029**	**J**	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:48	1
Arsenic	**0.0037**	**J**	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:48	1
Barium	**0.081**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:48	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:48	1
Calcium	**320**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:48	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:48	1
Cobalt	**0.0023**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:48	1
Chromium	**0.0085**		0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:48	1
Molybdenum	**0.0017**	**J**	0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:48	1
Lead	**0.0058**		0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:48	1
Selenium	**0.019**		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:48	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:48	1
Lithium	**0.064**		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:48	1

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00031**	**J**	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:53	1
Arsenic	**0.0025**	**J**	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:53	1
Barium	**0.038**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:53	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:53	1
Calcium	**500**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:53	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:53	1
Cobalt	**0.0021**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:53	1
Chromium	**0.0055**		0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:53	1
Molybdenum	**0.00081**	**J**	0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:53	1
Lead	**0.0026**		0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:53	1
Selenium	**0.011**		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:53	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:53	1
Lithium	**0.12**		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:53	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 12:57	1
Arsenic	**0.0016**	**J**	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 12:57	1
Barium	**0.048**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 12:57	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 12:57	1
Calcium	**130**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 12:57	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 12:57	1
Cobalt	**0.0097**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 12:57	1
Chromium	**0.00035**	**J**	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 12:57	1
Molybdenum	**0.16**		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 12:57	1
Lead	**0.00032**	**J**	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 12:57	1
Selenium	**0.00064**	**J**	0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 12:57	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 12:57	1
Lithium	**0.027**		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 12:57	1

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 13:01	1
Arsenic	**0.0013**	**J**	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 13:01	1
Barium	**0.054**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 13:01	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 13:01	1
Calcium	**130**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 13:01	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 13:01	1
Cobalt	**0.0088**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 13:01	1
Chromium	**0.00034**	**J**	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 13:01	1
Molybdenum	**0.23**		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 13:01	1
Lead	**0.00027**	**J**	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 13:01	1
Selenium	ND		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 13:01	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 13:01	1
Lithium	**0.037**		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 13:01	1

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 13:05	1
Arsenic	**0.0075**		0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 13:05	1
Barium	**0.088**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 13:05	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 13:05	1
Calcium	**150**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 13:05	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 13:05	1
Cobalt	**0.027**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 13:05	1
Chromium	**0.00029**	**J**	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 13:05	1
Molybdenum	**0.024**		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 13:05	1
Lead	**0.00081**	**J**	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 13:05	1
Selenium	ND		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 13:05	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 13:05	1
Lithium	**0.023**		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 13:05	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 13:09	1
Arsenic	**0.0039**	**J**	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 13:09	1
Barium	**0.084**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 13:09	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 13:09	1
Calcium	**180**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 13:09	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 13:09	1
Cobalt	**0.0099**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 13:09	1
Chromium	**0.00079**	**J**	0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 13:09	1
Molybdenum	**0.0034**	**J**	0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 13:09	1
Lead	**0.00047**	**J**	0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 13:09	1
Selenium	ND		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 13:09	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 13:09	1
Lithium	**0.0020**	**J**	0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 13:09	1

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00031**	**J**	0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 13:13	1
Arsenic	**0.0047**	**J**	0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 13:13	1
Barium	**0.23**	**B**	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 13:13	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 13:13	1
Calcium	**75**	**B**	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 13:13	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 13:13	1
Cobalt	**0.0022**		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 13:13	1
Chromium	**0.0043**		0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 13:13	1
Molybdenum	**0.013**		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 13:13	1
Lead	**0.0020**		0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 13:13	1
Selenium	**0.00075**	**J**	0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 13:13	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 13:13	1
Lithium	**0.0061**	**J**	0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 13:13	1

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 13:26	1
Arsenic	ND		0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 13:26	1
Barium	ND		0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 13:26	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 13:26	1
Calcium	ND		1.0	0.043	mg/L		03/07/17 14:00	03/08/17 13:26	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 13:26	1
Cobalt	ND		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 13:26	1
Chromium	ND		0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 13:26	1
Molybdenum	ND		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 13:26	1
Lead	ND		0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 13:26	1
Selenium	ND		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 13:26	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 13:26	1
Lithium	ND		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 13:26	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:38	1

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:41	1

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:47	1

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:49	1

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:52	1

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:54	1

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:56	1

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:58	1

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 19:01	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 19:03	1

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 19:05	1

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 19:07	1

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 19:14	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			03/03/17 14:18	1
Temperature	23.7	HF	1.0	1.0	Degrees C			03/03/17 14:18	1
Chloride	74	B	3.0	0.25	mg/L			03/03/17 12:24	1
Fluoride	0.85		0.50	0.060	mg/L			03/03/17 12:24	1
Sulfate	46	B	5.0	0.23	mg/L			03/03/17 12:24	1
Total Dissolved Solids (TDS)	380		10	4.7	mg/L			03/03/17 08:06	1
Total Suspended Solids	2.4	J	4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			03/03/17 14:23	1
Temperature	23.8	HF	1.0	1.0	Degrees C			03/03/17 14:23	1
Chloride	44	B	3.0	0.25	mg/L			03/03/17 13:43	1
Fluoride	0.40	J	0.50	0.060	mg/L			03/03/17 13:43	1
Sulfate	120	B	5.0	0.23	mg/L			03/03/17 13:43	1
Total Dissolved Solids (TDS)	580		10	4.7	mg/L			03/03/17 08:06	1
Total Suspended Solids	5.2		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			03/03/17 14:28	1

General Chemistry (Continued)

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	24.1	HF	1.0	1.0	Degrees C			03/03/17 14:28	1
Chloride	62	B	3.0	0.25	mg/L			03/03/17 14:03	1
Fluoride	0.38	J	0.50	0.060	mg/L			03/03/17 14:03	1
Sulfate	280	B	25	1.2	mg/L			03/03/17 21:41	5
Total Dissolved Solids (TDS)	900		10	4.7	mg/L			03/03/17 08:06	1
Total Suspended Solids	6.0		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			03/03/17 14:33	1
Temperature	24.2	HF	1.0	1.0	Degrees C			03/03/17 14:33	1
Chloride	40	B	3.0	0.25	mg/L			03/03/17 14:23	1
Fluoride	0.13	J	0.50	0.060	mg/L			03/03/17 14:23	1
Sulfate	2100	B	250	12	mg/L			03/03/17 22:01	50
Total Dissolved Solids (TDS)	4000		20	9.4	mg/L			03/03/17 08:06	1
Total Suspended Solids	6.0		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			03/03/17 14:38	1
Temperature	24.1	HF	1.0	1.0	Degrees C			03/03/17 14:38	1
Chloride	400	B	150	13	mg/L			03/03/17 22:21	50
Fluoride	3.3		1.0	0.12	mg/L			03/03/17 14:43	2
Sulfate	5500	B	250	12	mg/L			03/03/17 22:21	50
Total Dissolved Solids (TDS)	9100		100	47	mg/L			03/07/17 07:44	1
Total Suspended Solids	49		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			03/03/17 14:43	1
Temperature	23.9	HF	1.0	1.0	Degrees C			03/03/17 14:43	1
Chloride	500	B	30	2.5	mg/L			03/03/17 15:23	10
Fluoride	0.11	J	0.50	0.060	mg/L			03/03/17 15:03	1
Sulfate	490	B	50	2.3	mg/L			03/03/17 15:23	10
Total Dissolved Solids (TDS)	1900		20	9.4	mg/L			03/03/17 08:06	1
Total Suspended Solids	93		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			03/03/17 14:48	1
Temperature	23.9	HF	1.0	1.0	Degrees C			03/03/17 14:48	1
Chloride	120	B	3.0	0.25	mg/L			03/03/17 16:23	1

General Chemistry (Continued)

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.14	J	0.50	0.060	mg/L			03/03/17 16:23	1
Sulfate	2300	B	250	12	mg/L			03/03/17 22:41	50
Total Dissolved Solids (TDS)	4000		40	19	mg/L			03/07/17 07:44	1
Total Suspended Solids	160		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			03/03/17 14:53	1
Temperature	23.9	HF	1.0	1.0	Degrees C			03/03/17 14:53	1
Chloride	54	B	3.0	0.25	mg/L			03/03/17 16:42	1
Fluoride	2.3		0.50	0.060	mg/L			03/03/17 16:42	1
Sulfate	510	B	50	2.3	mg/L			03/03/17 23:01	10
Total Dissolved Solids (TDS)	1200		20	9.4	mg/L			03/03/17 08:06	1
Total Suspended Solids	13		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			03/03/17 15:03	1
Temperature	24.2	HF	1.0	1.0	Degrees C			03/03/17 15:03	1
Chloride	58	B	3.0	0.25	mg/L			03/03/17 17:02	1
Fluoride	3.0		0.50	0.060	mg/L			03/03/17 17:02	1
Sulfate	570	B	50	2.3	mg/L			03/03/17 23:21	10
Total Dissolved Solids (TDS)	1200		20	9.4	mg/L			03/03/17 08:06	1
Total Suspended Solids	6.4		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			03/03/17 14:58	1
Temperature	24.0	HF	1.0	1.0	Degrees C			03/03/17 14:58	1
Chloride	58	B	3.0	0.25	mg/L			03/03/17 17:22	1
Fluoride	1.8		0.50	0.060	mg/L			03/03/17 17:22	1
Sulfate	340	B	25	1.2	mg/L			03/04/17 00:20	5
Total Dissolved Solids (TDS)	1000		20	9.4	mg/L			03/03/17 08:06	1
Total Suspended Solids	20		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			03/03/17 15:22	1
Temperature	24.2	HF	1.0	1.0	Degrees C			03/03/17 15:22	1
Chloride	38	B	3.0	0.25	mg/L			03/03/17 17:42	1
Fluoride	0.33	J	0.50	0.060	mg/L			03/03/17 17:42	1
Sulfate	1.5	J B	5.0	0.23	mg/L			03/03/17 17:42	1

General Chemistry (Continued)

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	**940**		10	4.7	mg/L			03/03/17 08:06	1
Total Suspended Solids	**28**		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**8.0**	**HF**	0.1	0.1	SU			03/03/17 15:32	1
Temperature	**24.4**	**HF**	1.0	1.0	Degrees C			03/03/17 15:32	1
Chloride	**75**	**B**	3.0	0.25	mg/L			03/03/17 18:02	1
Fluoride	**0.82**		0.50	0.060	mg/L			03/03/17 18:02	1
Sulfate	**45**	**B**	5.0	0.23	mg/L			03/03/17 18:02	1
Total Dissolved Solids (TDS)	**410**		10	4.7	mg/L			03/03/17 08:06	1
Total Suspended Solids	**4.4**		4.0	1.1	mg/L			03/06/17 18:04	1

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**6.3**	**HF**	0.1	0.1	SU			03/08/17 13:56	1
Temperature	**24.5**	**HF**	1.0	1.0	Degrees C			03/08/17 13:56	1
Chloride	**0.59**	**J B**	3.0	0.25	mg/L			03/03/17 18:22	1
Fluoride	ND		0.50	0.060	mg/L			03/03/17 18:22	1
Sulfate	**0.38**	**J B**	5.0	0.23	mg/L			03/03/17 18:22	1
Total Dissolved Solids (TDS)	**9.0**	**J**	10	4.7	mg/L			03/03/17 08:06	1
Total Suspended Solids	ND		4.0	1.1	mg/L			03/06/17 18:04	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.192**		0.0892	0.0909	1.00	0.0934	pCi/L	03/07/17 09:00	03/29/17 05:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:41*	*1*

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0875	U	0.0785	0.0789	1.00	0.120	pCi/L	03/07/17 09:00	03/29/17 05:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:41*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.191		0.0902	0.0918	1.00	0.0930	pCi/L	03/07/17 09:00	03/29/17 05:42	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110	03/07/17 09:00	03/29/17 05:42	1

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.447		0.129	0.135	1.00	0.102	pCi/L	03/07/17 09:00	03/29/17 05:42	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110	03/07/17 09:00	03/29/17 05:42	1

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.238		0.103	0.106	1.00	0.116	pCi/L	03/07/17 09:00	03/29/17 05:42	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110	03/07/17 09:00	03/29/17 05:42	1

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.282		0.101	0.104	1.00	0.0838	pCi/L	03/07/17 09:00	03/29/17 05:42	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110	03/07/17 09:00	03/29/17 05:42	1

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.444		0.120	0.126	1.00	0.0800	pCi/L	03/07/17 09:00	03/29/17 05:42	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110	03/07/17 09:00	03/29/17 05:42	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.204		0.0882	0.0901	1.00	0.0842	pCi/L	03/07/17 09:00	03/29/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:44*	*1*

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.281		0.100	0.104	1.00	0.0835	pCi/L	03/07/17 09:00	03/29/17 05:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:43*	*1*

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.391		0.116	0.122	1.00	0.0852	pCi/L	03/07/17 09:00	03/29/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:44*	*1*

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0374	U	0.0502	0.0503	1.00	0.123	pCi/L	03/07/17 09:00	03/29/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:44*	*1*

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0690	U	0.0588	0.0591	1.00	0.0821	pCi/L	03/07/17 09:00	03/29/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:44*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0155	U	0.0569	0.0569	1.00	0.124	pCi/L	03/07/17 09:00	03/29/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:44*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0536	U	0.206	0.206	1.00	0.382	pCi/L	03/07/17 09:59	03/22/17 14:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*
Y Carrier	*84.5*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.195	U	0.227	0.228	1.00	0.374	pCi/L	03/07/17 09:59	03/22/17 14:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*
Y Carrier	*82.6*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.413**		0.250	0.253	1.00	0.379	pCi/L	03/07/17 09:59	03/22/17 14:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*
Y Carrier	*82.2*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.479		0.264	0.268	1.00	0.397	pCi/L	03/07/17 09:59	03/22/17 14:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*
Y Carrier	*80.7*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:08*	*1*

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.495		0.235	0.240	1.00	0.337	pCi/L	03/07/17 09:59	03/22/17 14:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:09*	*1*
Y Carrier	*82.6*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:09*	*1*

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.561		0.244	0.249	1.00	0.345	pCi/L	03/07/17 09:59	03/22/17 14:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:09*	*1*
Y Carrier	*88.6*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:09*	*1*

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.561		0.274	0.279	1.00	0.405	pCi/L	03/07/17 09:59	03/22/17 14:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:09*	*1*
Y Carrier	*80.7*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:09*	*1*

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.154	U	0.222	0.222	1.00	0.372	pCi/L	03/07/17 09:59	03/22/17 14:09	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110	03/07/17 09:59	03/22/17 14:09	1
Y Carrier	81.5		40 - 110	03/07/17 09:59	03/22/17 14:09	1

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0202	U	0.216	0.216	1.00	0.392	pCi/L	03/07/17 09:59	03/22/17 14:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110	03/07/17 09:59	03/22/17 14:09	1
Y Carrier	80.4		40 - 110	03/07/17 09:59	03/22/17 14:09	1

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.356	U	0.250	0.252	1.00	0.388	pCi/L	03/07/17 09:59	03/22/17 14:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110	03/07/17 09:59	03/22/17 14:49	1
Y Carrier	81.9		40 - 110	03/07/17 09:59	03/22/17 14:49	1

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0670	U	0.305	0.305	1.00	0.530	pCi/L	03/07/17 09:59	03/22/17 14:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110	03/07/17 09:59	03/22/17 14:49	1
Y Carrier	81.1		40 - 110	03/07/17 09:59	03/22/17 14:49	1

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.185	U	0.285	0.286	1.00	0.478	pCi/L	03/07/17 09:59	03/22/17 14:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110	03/07/17 09:59	03/22/17 14:00	1
Y Carrier	81.5		40 - 110	03/07/17 09:59	03/22/17 14:00	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.120	U	0.244	0.244	1.00	0.452	pCi/L	03/07/17 09:59	03/22/17 14:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:00*	*1*
Y Carrier	*80.7*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:00*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.138	U	0.224	0.225	5.00	0.382	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-7
Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.282	U	0.240	0.241	5.00	0.374	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-1
Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.604**		0.266	0.269	5.00	0.379	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-3
Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.927**		0.294	0.300	5.00	0.397	pCi/L		03/30/17 10:03	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-4
Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.734		0.257	0.262	5.00	0.337	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-6
Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.843		0.264	0.270	5.00	0.345	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-8
Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.00		0.299	0.306	5.00	0.405	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-9
Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.358	U	0.238	0.240	5.00	0.372	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-10
Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.260	U	0.238	0.239	5.00	0.392	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-11
Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.748		0.276	0.280	5.00	0.388	pCi/L		03/30/17 10:03	1

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-12
Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0296	U	0.309	0.309	5.00	0.530	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-1PD
Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.254	U	0.291	0.292	5.00	0.478	pCi/L		03/30/17 10:03	1

Client Sample ID: MW-10EB
Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.135	U	0.251	0.251	5.00	0.452	pCi/L		03/30/17 10:03	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-269539/1-A
Matrix: Water
Analysis Batch: 269760

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.0081	mg/L		03/07/17 14:00	03/08/17 16:35	1

Lab Sample ID: LCS 240-269539/2-A
Matrix: Water
Analysis Batch: 269760

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: 280-94371-1 MS
Matrix: Water
Analysis Batch: 269760

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.74		1.00	1.84		mg/L		110	75 - 125

Lab Sample ID: 280-94371-1 MSD
Matrix: Water
Analysis Batch: 269760

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.74		1.00	1.89		mg/L		116	75 - 125	3	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-269539/1-A
Matrix: Water
Analysis Batch: 269812

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00027	mg/L		03/07/17 14:00	03/08/17 11:55	1
Arsenic	ND		0.0050	0.00035	mg/L		03/07/17 14:00	03/08/17 11:55	1
Barium	0.00127	J	0.0050	0.00052	mg/L		03/07/17 14:00	03/08/17 11:55	1
Beryllium	ND		0.0010	0.00040	mg/L		03/07/17 14:00	03/08/17 11:55	1
Calcium	0.273	J	1.0	0.043	mg/L		03/07/17 14:00	03/08/17 11:55	1
Cadmium	ND		0.0010	0.00031	mg/L		03/07/17 14:00	03/08/17 11:55	1
Cobalt	ND		0.0010	0.00013	mg/L		03/07/17 14:00	03/08/17 11:55	1
Chromium	ND		0.0020	0.00026	mg/L		03/07/17 14:00	03/08/17 11:55	1
Molybdenum	ND		0.010	0.00051	mg/L		03/07/17 14:00	03/08/17 11:55	1
Lead	ND		0.0010	0.00016	mg/L		03/07/17 14:00	03/08/17 11:55	1
Selenium	ND		0.0050	0.00048	mg/L		03/07/17 14:00	03/08/17 11:55	1
Thallium	ND		0.0010	0.00028	mg/L		03/07/17 14:00	03/08/17 11:55	1
Lithium	ND		0.0080	0.00016	mg/L		03/07/17 14:00	03/08/17 11:55	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 240-269539/3-A
Matrix: Water
Analysis Batch: 269812

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony			0.100	0.0940		mg/L		94	80 - 120		
Arsenic			1.00	0.923		mg/L		92	80 - 120		
Barium			1.00	0.950		mg/L		95	80 - 120		
Beryllium			1.00	1.03		mg/L		103	80 - 120		
Calcium			10.0	10.4		mg/L		104	80 - 120		
Cadmium			1.00	1.06		mg/L		106	80 - 120		
Cobalt			1.00	1.00		mg/L		100	80 - 120		
Chromium			1.00	0.971		mg/L		97	80 - 120		
Molybdenum			0.100	0.0960		mg/L		96	80 - 120		
Lead			1.00	1.01		mg/L		101	80 - 120		
Selenium			1.00	1.01		mg/L		101	80 - 120		
Thallium			0.250	0.251		mg/L		101	80 - 120		
Lithium			0.100	0.100		mg/L		100	80 - 120		

Lab Sample ID: 280-94371-1 MS
Matrix: Water
Analysis Batch: 269812

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony	0.0013	J	0.100	0.0971		mg/L		96	75 - 125		
Arsenic	0.0037	J	1.00	0.958		mg/L		95	75 - 125		
Barium	0.14	B	1.00	1.17		mg/L		102	75 - 125		
Beryllium	ND		1.00	1.03		mg/L		103	75 - 125		
Calcium	73	B	10.0	81.3	4	mg/L		84	75 - 125		
Cadmium	ND		1.00	1.06		mg/L		106	75 - 125		
Cobalt	0.00056	J	1.00	1.01		mg/L		101	75 - 125		
Chromium	0.00038	J	1.00	0.990		mg/L		99	75 - 125		
Molybdenum	0.014		0.100	0.116		mg/L		102	75 - 125		
Lead	0.00023	J	1.00	1.03		mg/L		103	75 - 125		
Selenium	0.00065	J	1.00	0.994		mg/L		99	75 - 125		
Thallium	ND		0.250	0.256		mg/L		102	75 - 125		
Lithium	0.0035	J	0.100	0.104		mg/L		100	75 - 125		

Lab Sample ID: 280-94371-1 MSD
Matrix: Water
Analysis Batch: 269812

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 269539

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0013	J	0.100	0.102		mg/L		101	75 - 125	5	20
Arsenic	0.0037	J	1.00	0.993		mg/L		99	75 - 125	4	20
Barium	0.14	B	1.00	1.29		mg/L		114	75 - 125	10	20
Beryllium	ND		1.00	1.06		mg/L		106	75 - 125	3	20
Calcium	73	B	10.0	86.0	4	mg/L		131	75 - 125	6	20
Cadmium	ND		1.00	1.10		mg/L		110	75 - 125	4	20
Cobalt	0.00056	J	1.00	1.04		mg/L		104	75 - 125	3	20
Chromium	0.00038	J	1.00	1.03		mg/L		102	75 - 125	4	20
Molybdenum	0.014		0.100	0.122		mg/L		108	75 - 125	5	20
Lead	0.00023	J	1.00	1.06		mg/L		106	75 - 125	3	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-94371-1 MSD — **Client Sample ID: MW-1P**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 269812 — **Prep Batch: 269539**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.00065	J	1.00	1.02		mg/L		102	75 - 125	2	20
Thallium	ND		0.250	0.266		mg/L		106	75 - 125	4	20
Lithium	0.0035	J	0.100	0.113		mg/L		110	75 - 125	8	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-364787/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 366393 — **Prep Batch: 364787**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		03/21/17 11:44	03/21/17 18:12	1

Lab Sample ID: LCS 280-364787/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 366393 — **Prep Batch: 364787**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00522		mg/L		104	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-364292/29 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364292

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Lab Sample ID: LCS 280-364292/54 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364292

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Lab Sample ID: 280-94371-11 DU — **Client Sample ID: MW-12**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364292

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.6	HF	7.6		SU		0.4	5
Temperature	24.2	HF	24.2		Degrees C		0.2	10

Method: 9040B - pH (Continued)

Lab Sample ID: LCS 280-364804/29
Matrix: Water
Analysis Batch: 364804

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-364233/13
Matrix: Water
Analysis Batch: 364233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.632	J	3.0	0.25	mg/L			03/03/17 10:38	1
Fluoride	ND		0.50	0.060	mg/L			03/03/17 10:38	1
Sulfate	0.390	J	5.0	0.23	mg/L			03/03/17 10:38	1

Lab Sample ID: LCS 280-364233/11
Matrix: Water
Analysis Batch: 364233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.0		mg/L		96	90 - 110
Fluoride	5.00	4.86		mg/L		97	90 - 110
Sulfate	100	96.5		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-364233/12
Matrix: Water
Analysis Batch: 364233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	96.2		mg/L		96	90 - 110	0	10
Fluoride	5.00	4.88		mg/L		98	90 - 110	1	10
Sulfate	100	96.7		mg/L		97	90 - 110	0	10

Lab Sample ID: MRL 280-364233/10
Matrix: Water
Analysis Batch: 364233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.33	J	mg/L		93	50 - 150
Fluoride	0.200	0.212	J	mg/L		106	50 - 150
Sulfate	2.50	2.44	J	mg/L		98	50 - 150

Lab Sample ID: 280-94371-1 MS
Matrix: Water
Analysis Batch: 364233

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	74	B	25.0	99.5		mg/L		100	80 - 120
Fluoride	0.85		5.00	5.65		mg/L		96	80 - 120
Sulfate	46	B	25.0	70.0		mg/L		98	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-94371-1 MSD
Matrix: Water
Analysis Batch: 364233

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	74	B	25.0	99.8		mg/L		101	80 - 120	0	20
Fluoride	0.85		5.00	5.66		mg/L		96	80 - 120	0	20
Sulfate	46	B	25.0	70.3		mg/L		99	80 - 120	0	20

Lab Sample ID: 280-94371-1 DU
Matrix: Water
Analysis Batch: 364233

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	74	B	74.6		mg/L		0.08	15
Fluoride	0.85		0.832		mg/L		2	15
Sulfate	46	B	45.5		mg/L		0.2	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-364226/1
Matrix: Water
Analysis Batch: 364226

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			03/03/17 08:06	1

Lab Sample ID: LCS 280-364226/2
Matrix: Water
Analysis Batch: 364226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	480		mg/L		96	86 - 110

Lab Sample ID: 280-94371-1 DU
Matrix: Water
Analysis Batch: 364226

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	380		387		mg/L		2	10

Lab Sample ID: MB 280-364529/1
Matrix: Water
Analysis Batch: 364529

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			03/07/17 07:44	1

Lab Sample ID: LCS 280-364529/2
Matrix: Water
Analysis Batch: 364529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	480		mg/L		96	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-364469/2
Matrix: Water
Analysis Batch: 364469

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			03/06/17 18:04	1

Lab Sample ID: LCS 280-364469/1
Matrix: Water
Analysis Batch: 364469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	93.2		mg/L		93	86 - 114

Lab Sample ID: 280-94371-12 DU
Matrix: Water
Analysis Batch: 364469

Client Sample ID: MW-1PD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	4.4		4.00		mg/L		10	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-296333/1-A
Matrix: Water
Analysis Batch: 300476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296333

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03531	U	0.0548	0.0549	1.00	0.0951	pCi/L	03/07/17 09:00	03/29/17 05:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*03/07/17 09:00*	*03/29/17 05:41*	*1*

Lab Sample ID: LCS 160-296333/2-A
Matrix: Water
Analysis Batch: 300476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296333

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	11.32		1.18	1.00	0.115	pCi/L	100	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-296367/1-A
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296367

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.01751	U	0.252	0.252	1.00	0.445	pCi/L	03/07/17 09:59	03/22/17 14:07	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:07*	*1*
Y Carrier	*83.0*		*40 - 110*	*03/07/17 09:59*	*03/22/17 14:07*	*1*

Lab Sample ID: LCS 160-296367/2-A
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296367

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.7	13.57		1.48	1.00	0.390	pCi/L	99	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Metals

Prep Batch: 269539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total Recoverable	Water	3005A	
280-94371-2	MW-7	Total Recoverable	Water	3005A	
280-94371-3	MW-1	Total Recoverable	Water	3005A	
280-94371-4	MW-3	Total Recoverable	Water	3005A	
280-94371-5	MW-4	Total Recoverable	Water	3005A	
280-94371-6	MW-6	Total Recoverable	Water	3005A	
280-94371-7	MW-8	Total Recoverable	Water	3005A	
280-94371-8	MW-9	Total Recoverable	Water	3005A	
280-94371-9	MW-10	Total Recoverable	Water	3005A	
280-94371-10	MW-11	Total Recoverable	Water	3005A	
280-94371-11	MW-12	Total Recoverable	Water	3005A	
280-94371-12	MW-1PD	Total Recoverable	Water	3005A	
280-94371-13	MW-10EB	Total Recoverable	Water	3005A	
MB 240-269539/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-269539/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-269539/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-94371-1 MS	MW-1P	Total Recoverable	Water	3005A	
280-94371-1 MS	MW-1P	Total Recoverable	Water	3005A	
280-94371-1 MSD	MW-1P	Total Recoverable	Water	3005A	
280-94371-1 MSD	MW-1P	Total Recoverable	Water	3005A	

Analysis Batch: 269760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total Recoverable	Water	6010C	269539
280-94371-2	MW-7	Total Recoverable	Water	6010C	269539
280-94371-3	MW-1	Total Recoverable	Water	6010C	269539
280-94371-4	MW-3	Total Recoverable	Water	6010C	269539
280-94371-5	MW-4	Total Recoverable	Water	6010C	269539
280-94371-6	MW-6	Total Recoverable	Water	6010C	269539
280-94371-7	MW-8	Total Recoverable	Water	6010C	269539
280-94371-8	MW-9	Total Recoverable	Water	6010C	269539
280-94371-9	MW-10	Total Recoverable	Water	6010C	269539
280-94371-10	MW-11	Total Recoverable	Water	6010C	269539
280-94371-11	MW-12	Total Recoverable	Water	6010C	269539
280-94371-12	MW-1PD	Total Recoverable	Water	6010C	269539
280-94371-13	MW-10EB	Total Recoverable	Water	6010C	269539
MB 240-269539/1-A	Method Blank	Total Recoverable	Water	6010C	269539
LCS 240-269539/2-A	Lab Control Sample	Total Recoverable	Water	6010C	269539
280-94371-1 MS	MW-1P	Total Recoverable	Water	6010C	269539
280-94371-1 MSD	MW-1P	Total Recoverable	Water	6010C	269539

Analysis Batch: 269812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total Recoverable	Water	6020A	269539
280-94371-2	MW-7	Total Recoverable	Water	6020A	269539
280-94371-3	MW-1	Total Recoverable	Water	6020A	269539
280-94371-4	MW-3	Total Recoverable	Water	6020A	269539
280-94371-5	MW-4	Total Recoverable	Water	6020A	269539
280-94371-6	MW-6	Total Recoverable	Water	6020A	269539
280-94371-7	MW-8	Total Recoverable	Water	6020A	269539
280-94371-8	MW-9	Total Recoverable	Water	6020A	269539

Metals (Continued)

Analysis Batch: 269812 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-9	MW-10	Total Recoverable	Water	6020A	269539
280-94371-10	MW-11	Total Recoverable	Water	6020A	269539
280-94371-11	MW-12	Total Recoverable	Water	6020A	269539
280-94371-12	MW-1PD	Total Recoverable	Water	6020A	269539
280-94371-13	MW-10EB	Total Recoverable	Water	6020A	269539
MB 240-269539/1-A	Method Blank	Total Recoverable	Water	6020A	269539
LCS 240-269539/3-A	Lab Control Sample	Total Recoverable	Water	6020A	269539
280-94371-1 MS	MW-1P	Total Recoverable	Water	6020A	269539
280-94371-1 MSD	MW-1P	Total Recoverable	Water	6020A	269539

Analysis Batch: 269944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-4	MW-3	Total Recoverable	Water	6020A	269539

Prep Batch: 364787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	7470A	
280-94371-2	MW-7	Total/NA	Water	7470A	
280-94371-3	MW-1	Total/NA	Water	7470A	
280-94371-4	MW-3	Total/NA	Water	7470A	
280-94371-5	MW-4	Total/NA	Water	7470A	
280-94371-6	MW-6	Total/NA	Water	7470A	
280-94371-7	MW-8	Total/NA	Water	7470A	
280-94371-8	MW-9	Total/NA	Water	7470A	
280-94371-9	MW-10	Total/NA	Water	7470A	
280-94371-10	MW-11	Total/NA	Water	7470A	
280-94371-11	MW-12	Total/NA	Water	7470A	
280-94371-12	MW-1PD	Total/NA	Water	7470A	
280-94371-13	MW-10EB	Total/NA	Water	7470A	
MB 280-364787/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-364787/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 366393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	7470A	364787
280-94371-2	MW-7	Total/NA	Water	7470A	364787
280-94371-3	MW-1	Total/NA	Water	7470A	364787
280-94371-4	MW-3	Total/NA	Water	7470A	364787
280-94371-5	MW-4	Total/NA	Water	7470A	364787
280-94371-6	MW-6	Total/NA	Water	7470A	364787
280-94371-7	MW-8	Total/NA	Water	7470A	364787
280-94371-8	MW-9	Total/NA	Water	7470A	364787
280-94371-9	MW-10	Total/NA	Water	7470A	364787
280-94371-10	MW-11	Total/NA	Water	7470A	364787
280-94371-11	MW-12	Total/NA	Water	7470A	364787
280-94371-12	MW-1PD	Total/NA	Water	7470A	364787
280-94371-13	MW-10EB	Total/NA	Water	7470A	364787
MB 280-364787/1-A	Method Blank	Total/NA	Water	7470A	364787
LCS 280-364787/2-A	Lab Control Sample	Total/NA	Water	7470A	364787

General Chemistry

Analysis Batch: 364226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	SM 2540C	
280-94371-2	MW-7	Total/NA	Water	SM 2540C	
280-94371-3	MW-1	Total/NA	Water	SM 2540C	
280-94371-4	MW-3	Total/NA	Water	SM 2540C	
280-94371-6	MW-6	Total/NA	Water	SM 2540C	
280-94371-8	MW-9	Total/NA	Water	SM 2540C	
280-94371-9	MW-10	Total/NA	Water	SM 2540C	
280-94371-10	MW-11	Total/NA	Water	SM 2540C	
280-94371-11	MW-12	Total/NA	Water	SM 2540C	
280-94371-12	MW-1PD	Total/NA	Water	SM 2540C	
280-94371-13	MW-10EB	Total/NA	Water	SM 2540C	
MB 280-364226/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-364226/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-94371-1 DU	MW-1P	Total/NA	Water	SM 2540C	

Analysis Batch: 364233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	9056A	
280-94371-2	MW-7	Total/NA	Water	9056A	
280-94371-3	MW-1	Total/NA	Water	9056A	
280-94371-3	MW-1	Total/NA	Water	9056A	
280-94371-4	MW-3	Total/NA	Water	9056A	
280-94371-4	MW-3	Total/NA	Water	9056A	
280-94371-5	MW-4	Total/NA	Water	9056A	
280-94371-5	MW-4	Total/NA	Water	9056A	
280-94371-6	MW-6	Total/NA	Water	9056A	
280-94371-6	MW-6	Total/NA	Water	9056A	
280-94371-7	MW-8	Total/NA	Water	9056A	
280-94371-7	MW-8	Total/NA	Water	9056A	
280-94371-8	MW-9	Total/NA	Water	9056A	
280-94371-8	MW-9	Total/NA	Water	9056A	
280-94371-9	MW-10	Total/NA	Water	9056A	
280-94371-9	MW-10	Total/NA	Water	9056A	
280-94371-10	MW-11	Total/NA	Water	9056A	
280-94371-10	MW-11	Total/NA	Water	9056A	
280-94371-11	MW-12	Total/NA	Water	9056A	
280-94371-12	MW-1PD	Total/NA	Water	9056A	
280-94371-13	MW-10EB	Total/NA	Water	9056A	
MB 280-364233/13	Method Blank	Total/NA	Water	9056A	
LCS 280-364233/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-364233/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-364233/10	Lab Control Sample	Total/NA	Water	9056A	
280-94371-1 MS	MW-1P	Total/NA	Water	9056A	
280-94371-1 MSD	MW-1P	Total/NA	Water	9056A	
280-94371-1 DU	MW-1P	Total/NA	Water	9056A	

Analysis Batch: 364292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	9040B	
280-94371-2	MW-7	Total/NA	Water	9040B	
280-94371-3	MW-1	Total/NA	Water	9040B	

General Chemistry (Continued)

Analysis Batch: 364292 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-4	MW-3	Total/NA	Water	9040B	
280-94371-5	MW-4	Total/NA	Water	9040B	
280-94371-6	MW-6	Total/NA	Water	9040B	
280-94371-7	MW-8	Total/NA	Water	9040B	
280-94371-8	MW-9	Total/NA	Water	9040B	
280-94371-9	MW-10	Total/NA	Water	9040B	
280-94371-10	MW-11	Total/NA	Water	9040B	
280-94371-11	MW-12	Total/NA	Water	9040B	
280-94371-12	MW-1PD	Total/NA	Water	9040B	
LCS 280-364292/29	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-364292/54	Lab Control Sample	Total/NA	Water	9040B	
280-94371-11 DU	MW-12	Total/NA	Water	9040B	

Analysis Batch: 364469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	SM 2540D	
280-94371-2	MW-7	Total/NA	Water	SM 2540D	
280-94371-3	MW-1	Total/NA	Water	SM 2540D	
280-94371-4	MW-3	Total/NA	Water	SM 2540D	
280-94371-5	MW-4	Total/NA	Water	SM 2540D	
280-94371-6	MW-6	Total/NA	Water	SM 2540D	
280-94371-7	MW-8	Total/NA	Water	SM 2540D	
280-94371-8	MW-9	Total/NA	Water	SM 2540D	
280-94371-9	MW-10	Total/NA	Water	SM 2540D	
280-94371-10	MW-11	Total/NA	Water	SM 2540D	
280-94371-11	MW-12	Total/NA	Water	SM 2540D	
280-94371-12	MW-1PD	Total/NA	Water	SM 2540D	
280-94371-13	MW-10EB	Total/NA	Water	SM 2540D	
MB 280-364469/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-364469/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-94371-12 DU	MW-1PD	Total/NA	Water	SM 2540D	

Analysis Batch: 364529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-5	MW-4	Total/NA	Water	SM 2540C	
280-94371-7	MW-8	Total/NA	Water	SM 2540C	
MB 280-364529/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-364529/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 364804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-13	MW-10EB	Total/NA	Water	9040B	
LCS 280-364804/29	Lab Control Sample	Total/NA	Water	9040B	

Rad

Prep Batch: 296333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	PrecSep-21	
280-94371-2	MW-7	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 296333 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-3	MW-1	Total/NA	Water	PrecSep-21	
280-94371-4	MW-3	Total/NA	Water	PrecSep-21	
280-94371-5	MW-4	Total/NA	Water	PrecSep-21	
280-94371-6	MW-6	Total/NA	Water	PrecSep-21	
280-94371-7	MW-8	Total/NA	Water	PrecSep-21	
280-94371-8	MW-9	Total/NA	Water	PrecSep-21	
280-94371-9	MW-10	Total/NA	Water	PrecSep-21	
280-94371-10	MW-11	Total/NA	Water	PrecSep-21	
280-94371-11	MW-12	Total/NA	Water	PrecSep-21	
280-94371-12	MW-1PD	Total/NA	Water	PrecSep-21	
280-94371-13	MW-10EB	Total/NA	Water	PrecSep-21	
MB 160-296333/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-296333/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 296367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-94371-1	MW-1P	Total/NA	Water	PrecSep_0	
280-94371-2	MW-7	Total/NA	Water	PrecSep_0	
280-94371-3	MW-1	Total/NA	Water	PrecSep_0	
280-94371-4	MW-3	Total/NA	Water	PrecSep_0	
280-94371-5	MW-4	Total/NA	Water	PrecSep_0	
280-94371-6	MW-6	Total/NA	Water	PrecSep_0	
280-94371-7	MW-8	Total/NA	Water	PrecSep_0	
280-94371-8	MW-9	Total/NA	Water	PrecSep_0	
280-94371-9	MW-10	Total/NA	Water	PrecSep_0	
280-94371-10	MW-11	Total/NA	Water	PrecSep_0	
280-94371-11	MW-12	Total/NA	Water	PrecSep_0	
280-94371-12	MW-1PD	Total/NA	Water	PrecSep_0	
280-94371-13	MW-10EB	Total/NA	Water	PrecSep_0	
MB 160-296367/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-296367/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-1P

Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 16:43	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:03	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:38	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:18	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 12:24	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.79 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:41	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.79 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:08	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 02/27/17 17:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:13	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:23	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:41	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:23	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 13:43	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:41	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:08	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-1

Date Collected: 02/27/17 15:15
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:18	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:36	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:47	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:28	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 14:03	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	364233	03/03/17 21:41	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.23 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:42	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.23 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:08	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Client Sample ID: MW-3

Date Collected: 02/27/17 13:45
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:22	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:40	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		2			269944	03/09/17 11:58	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:49	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:33	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 14:23	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	364233	03/03/17 22:01	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.36 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:42	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.36 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:08	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-4

Date Collected: 03/02/17 10:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:27	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:44	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:52	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:38	CCJ	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	364233	03/03/17 14:43	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	364233	03/03/17 22:21	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	364529	03/07/17 07:44	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.28 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:42	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.28 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:09	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 03/01/17 15:55
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:32	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:48	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:54	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:43	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 15:03	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	364233	03/03/17 15:23	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.98 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:42	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.98 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:09	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-8

Date Collected: 03/01/17 15:05
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:37	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:53	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:56	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:48	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 16:23	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	364233	03/03/17 22:41	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	364529	03/07/17 07:44	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.90 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:42	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.90 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:09	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 02/28/17 16:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:41	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 12:57	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 18:58	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:53	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 16:42	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	364233	03/03/17 23:01	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.55 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:44	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.55 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:09	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-10

Date Collected: 03/01/17 10:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:46	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 13:01	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 19:01	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 15:03	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 17:02	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	364233	03/03/17 23:21	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.13 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:43	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.13 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:09	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Client Sample ID: MW-11

Date Collected: 03/01/17 12:25
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 17:59	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 13:05	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 19:03	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 14:58	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 17:22	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	364233	03/04/17 00:20	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.98 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:44	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.98 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:49	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-12

Date Collected: 03/01/17 13:40
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 18:03	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 13:09	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 19:05	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 15:22	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 17:42	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:44	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298901	03/22/17 14:49	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Client Sample ID: MW-1PD

Date Collected: 02/28/17 14:30
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 18:08	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 13:13	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 19:07	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364292	03/03/17 15:32	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 18:02	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.07 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:44	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.07 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298903	03/22/17 14:00	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Client Sample ID: MW-10EB

Date Collected: 03/01/17 11:00
Date Received: 03/02/17 11:45

Lab Sample ID: 280-94371-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			269760	03/08/17 18:12	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	269539	03/07/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			269812	03/08/17 13:26	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	364787	03/21/17 11:44	CDH	TAL DEN
Total/NA	Analysis	7470A		1			366393	03/21/17 19:14	CDH	TAL DEN
Total/NA	Analysis	9040B		1			364804	03/08/17 13:56	CCJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	364233	03/03/17 18:22	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	364226	03/03/17 08:06	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	364469	03/06/17 18:04	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	296333	03/07/17 09:00	MBC	TAL SL
Total/NA	Analysis	9315		1			300476	03/29/17 05:44	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	296367	03/07/17 09:59	MBC	TAL SL
Total/NA	Analysis	9320		1			298903	03/22/17 14:00	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			300758	03/30/17 10:03	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2927	04-30-17 *
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17 *
Illinois	NELAP	5	200004	07-31-17 *
Kansas	NELAP	7	E-10336	03-31-17 *
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17
Minnesota	NELAP	5	039-999-348	12-31-17
Minnesota (Petrofund)	State Program	1	3506	07-31-17 *
Nevada	State Program	9	OH-000482008A	07-31-17 *
New Jersey	NELAP	2	OH001	06-30-17 *
New York	NELAP	2	10975	03-31-17 *
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-18
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: T. Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-633-2380(Tel)~~ 303-351-2139	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Unit 8 MW-1~~ MW-1P	2/28/17	1430	G	Water		N	X	X	X	X	X		
MW-7	2/27/17	1705	G	Water		N	X	X	X	X	X		
MW-1	2/27/17	1515	G	Water		N	X	X	X	X	X		
MW-3	2/27/17	1345	G	Water		N	X	X	X	X	X		
MW-4	3/2/17	1000	G	Water		N	X	X	X	X	X		
MW-6	3/1/17	1555	G	Water		N	X	X	X	X	X		
MW-8	3/1/17	1505	G	Water		N	X	X	X	X	X		
MW-9	2/28/17	1625	G	Water		N	X	X	X	X	X		
MW-10	3/1/17	1025	G	Water		N	X	X	X	X	X		
MW-11	3/1/17	1225	G	Water		N	X	X	X	X	X		
MW-12	3/1/17	1340	G	Water		N	X	X	X	X	X		


280-94371 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Travis Snyder	3/2/17 1145			3/2/17 1145	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.3°, 2.1°, 0.6°, 0.4°, IR#7, -0.0 3/2/17 GP

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: T. Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-633-3800(Tel)~~ 303-351-2139	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Field Duplicate~~ MW-1PD	2/28/17	1430	G	Water		N	X	X	X	X	X		
~~Equipment Blank~~ MW-10EB	3/1/17	1100	G	Water		N	X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Travis Snyder	3/2/17 1145			3/2/17 1145	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

3/30/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-94371 Chain of Custody

testAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	COC No: 280-389615.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA	Job #: 280-94371-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/31/2017		
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Xcel Energy CCR - Valmont Station	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1P (280-94371-1)	2/28/17	14:30 Mountain		Water			X	X	X	2	
MW-7 (280-94371-2)	2/27/17	17:05 Mountain		Water			X	X	X	2	
MW-1 (280-94371-3)	2/27/17	15:15 Mountain		Water			X	X	X	2	
MW-3 (280-94371-4)	2/27/17	13:45 Mountain		Water			X	X	X	2	
MW-4 (280-94371-5)	3/2/17	10:00 Mountain		Water			X	X	X	2	
MW-6 (280-94371-6)	3/1/17	15:55 Mountain		Water			X	X	X	2	
MW-8 (280-94371-7)	3/1/17	15:05 Mountain		Water			X	X	X	2	
MW-9 (280-94371-8)	2/28/17	16:25 Mountain		Water			X	X	X	2	
MW-10 (280-94371-9)	3/1/17	10:25 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by: Katherine Rue	Date/Time: 3/3/17 1445	Company TAL	Received by: Kristen Taylor	Date/Time: 3/4/17 0830	Company TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

3/30/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-389615.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-94371-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/31/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-11 (280-94371-10)	3/1/17	12:25 Mountain		Water			X	X	X	2	
MW-12 (280-94371-11)	3/1/17	13:40 Mountain		Water			X	X	X	2	
MW-1PD (280-94371-12)	2/28/17	14:30 Mountain		Water			X	X	X	2	
MW-10EB (280-94371-13)	3/1/17	11:00 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Takruda Mul	3/3/17 1445	TAD	Kristen Taylor	3/4/17 0930	TASK
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

3/30/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

5.8/CSS

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-389614.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-94371-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 3/28/2017			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

S20

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1P (280-94371-1)	2/28/17	14:30 Mountain		Water			X	X	1	, Use Collision Cell
MW-7 (280-94371-2)	2/27/17	17:05 Mountain		Water			X	X	1	Use Collision Cell
MW-1 (280-94371-3)	2/27/17	15:15 Mountain		Water			X	X	1	, Use Collision Cell
MW-3 (280-94371-4)	2/27/17	13:45 Mountain		Water			X	X	1	Use Collision Cell
MW-4 (280-94371-5)	3/2/17	10:00 Mountain		Water			X	X	1	, Use Collision Cell
MW-6 (280-94371-6)	3/1/17	15:55 Mountain		Water			X	X	1	Use Collision Cell
MW-8 (280-94371-7)	3/1/17	15:05 Mountain		Water			X	X	1	, Use Collision Cell
MW-9 (280-94371-8)	2/28/17	16:25 Mountain		Water			X	X	1	Use Collision Cell
MW-10 (280-94371-9)	3/1/17	10:25 Mountain		Water			X	X	1	, Use Collision Cell

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Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/3/17 1510	TAD	[signature]	3/4/17 0940	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

3/30/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-389614.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-94371-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 3/28/2017			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

S20

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-11 (280-94371-10)	3/1/17	12:25 Mountain		Water			X	X	1	Use Collision Cell
MW-12 (280-94371-11)	3/1/17	13:40 Mountain		Water			X	X	1	, Use Collision Cell
MW-1PD (280-94371-12)	2/28/17	14:30 Mountain		Water			X	X	1	Use Collision Cell
MW-10EB (280-94371-13)	3/1/17	11:00 Mountain		Water			X	X	1	, Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Heather Neel	3/3/17 1570	TAD		3/4/17 0940	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client Denver Site Name _____ Cooler unpacked by:

Cooler Received on 3-4-17 Opened on 3-6-17

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

☐ See Multiple Cooler Form

1. Cooler temperature upon receipt
   IR GUN# IR-8 (CF **-0.3** °C) Observed Cooler Temp. 5.8 °C Corrected Cooler Temp. 5.5 °C
   IR GUN #36 (CF **+0.3**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 11-15 have been checked at the originating laboratory.		
11. Were sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# **HC682547**
12. Were VOAs on the COC?	Yes	No
13. Were air bubbles >6 mm in any VOA vials?	Yes	No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
15. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-94371-1

Login Number: 94371
List Number: 1
Creator: Parrott, Gregg S

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	N/A	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-94371-1

Login Number: 94371
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 03/04/17 01:21 PM

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.	N/A	
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	20.0, 20.0, 20.0
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?	False	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-94371-1

Login Number: 94371
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 03/04/17 01:26 PM

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.	N/A	
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	20.0, 20.0, 20.0
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-94371-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-94371-1	MW-1P	91.2
280-94371-2	MW-7	98.8
280-94371-3	MW-1	94.1
280-94371-4	MW-3	99.1
280-94371-5	MW-4	99.1
280-94371-6	MW-6	97.3
280-94371-7	MW-8	103
280-94371-8	MW-9	94.4
280-94371-9	MW-10	97.1
280-94371-10	MW-11	97.9
280-94371-11	MW-12	96.2
280-94371-12	MW-1PD	95.9
280-94371-13	MW-10EB	98.5
LCS 160-296333/2-A	Lab Control Sample	99.4
MB 160-296333/1-A	Method Blank	95.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-94371-1	MW-1P	91.2	84.5
280-94371-2	MW-7	98.8	82.6
280-94371-3	MW-1	94.1	82.2
280-94371-4	MW-3	99.1	80.7
280-94371-5	MW-4	99.1	82.6
280-94371-6	MW-6	97.3	88.6
280-94371-7	MW-8	103	80.7
280-94371-8	MW-9	94.4	81.5
280-94371-9	MW-10	97.1	80.4
280-94371-10	MW-11	97.9	81.9
280-94371-11	MW-12	96.2	81.1
280-94371-12	MW-1PD	95.9	81.5
280-94371-13	MW-10EB	98.5	80.7
LCS 160-296367/2-A	Lab Control Sample	99.4	81.9
MB 160-296367/1-A	Method Blank	95.3	83.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-97334-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
6/19/2017 1:50:15 PM
Jamie Ide, Project Manager I
(303)736-0126
jamie.ide@testamericainc.com

Designee for

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Qualifiers

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

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)

Job ID: 280-97334-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-97334-1

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.

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.

RECEIPT
The samples were received on 5/19/2017 9:26 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.3º C, 2.9º C and 4.3º C.

TOTAL RECOVERABLE METALS
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/23/2017 and analyzed on 05/24/2017.

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

TOTAL RECOVERABLE METALS (ICPMS)
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/23/2017 and analyzed on 05/31/2017 and 06/01/2017.

The continuing calibration verification (CCV) associated with batch 240-281145 recovered above the upper control limit for Arsenic and/or Antimony. The samples associated with this CCV were below the requested reporting limit for the affected analytes; therefore, the data have been reported.

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

TOTAL MERCURY
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 06/05/2017.

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

TOTAL DISSOLVED SOLIDS
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 05/23/2017.

Job ID: 280-97334-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

TOTAL SUSPENDED SOLIDS
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 05/23/2017.

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

CORROSIVITY (PH)
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 05/19/2017 and 06/14/2017.

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

ANIONS (28 DAYS)
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 06/13/2017.

Chloride and Sulfate were detected in method blank MB 280-377077/6 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Sulfate exceeded the RPD limit for the duplicate of sample MW-12DU (280-97334-5).

Samples MW-9 (280-97334-2)[5X], MW-10 (280-97334-3)[5X], MW-11 (280-97334-4)[5X] and MW-9FD (280-97334-6)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 05/25/2017 and analyzed on 06/16/2017.

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

RADIUM-228
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 05/25/2017 and analyzed on 06/07/2017.

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

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-1P (280-97334-1), MW-9 (280-97334-2), MW-10 (280-97334-3), MW-11 (280-97334-4), MW-12 (280-97334-5), MW-9FD (280-97334-6) and MW-9EB (280-97334-7) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 06/18/2017.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-1P — Lab Sample ID: 280-97334-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.79		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0044	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.17		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	75		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00046	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.00098	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.0027	J	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	82	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.98		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	50	B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	420		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-97334-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	12		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0019	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.050		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0097		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.15		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0012	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.023		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	60	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.0		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	600	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-97334-3

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 280-97334-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	16		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0013	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.052		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0091		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.24		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0011	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.031		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	64	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	660	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-97334-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.5		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0060		0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.11		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.024		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.031		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.00076	J	0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.0011	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.018		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	59	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.4		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	210	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	900		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	8.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-97334-5

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Client Sample ID: MW-12 (Continued) — Lab Sample ID: 280-97334-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.5		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0041	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.062		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	150		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0085		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0029	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	39	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.54		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	5.9	B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	900		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	22		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9FD — Lab Sample ID: 280-97334-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	11		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0019	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.050		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	110		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0094		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.15		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0012	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.022		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	59	B	3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.0		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	580	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9EB — Lab Sample ID: 280-97334-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.029	J	0.20	0.0081	mg/L	1		6010C	Total Recoverable
pH adj. to 25 deg C	5.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-9EB (Continued)

Lab Sample ID: 280-97334-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	7.7	B	5.0	0.23	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-97334-1	MW-1P	Water	05/18/17 14:25	05/19/17 09:26
280-97334-2	MW-9	Water	05/18/17 15:55	05/19/17 09:26
280-97334-3	MW-10	Water	05/17/17 16:35	05/19/17 09:26
280-97334-4	MW-11	Water	05/17/17 14:00	05/19/17 09:26
280-97334-5	MW-12	Water	05/17/17 15:05	05/19/17 09:26
280-97334-6	MW-9FD	Water	05/18/17 16:55	05/19/17 09:26
280-97334-7	MW-9EB	Water	05/18/17 16:15	05/19/17 09:26

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.79**		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:21	1

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**12**		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:25	1

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**16**		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:30	1

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.5**		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:34	1

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.5**		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:47	1

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**11**		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:52	1

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.029**	**J**	0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 11:56	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 18:58	1
Arsenic	**0.0044**	**J ^**	0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 18:58	1
Barium	**0.17**		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 18:58	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 18:58	1
Calcium	**75**		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 18:58	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 18:58	1
Cobalt	**0.00046**	**J**	0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 18:58	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 18:58	1
Molybdenum	**0.015**		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 18:58	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 18:58	1
Selenium	**0.00098**	**J**	0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 18:58	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:23	1
Lithium	**0.0027**	**J**	0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:23	1

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 19:03	1
Arsenic	**0.0019**	**J ^**	0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 19:03	1
Barium	**0.050**		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 19:03	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 19:03	1
Calcium	**120**		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 19:03	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 19:03	1
Cobalt	**0.0097**		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 19:03	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 19:03	1
Molybdenum	**0.15**		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 19:03	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 19:03	1
Selenium	**0.0012**	**J**	0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 19:03	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:27	1
Lithium	**0.023**		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:27	1

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 19:07	1
Arsenic	**0.0013**	**J ^**	0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 19:07	1
Barium	**0.052**		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 19:07	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 19:07	1
Calcium	**120**		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 19:07	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 19:07	1
Cobalt	**0.0091**		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 19:07	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 19:07	1
Molybdenum	**0.24**		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 19:07	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 19:07	1
Selenium	**0.0011**	**J**	0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 19:07	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:31	1
Lithium	**0.031**		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:31	1

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 19:11	1
Arsenic	**0.0060**		0.0050	0.00075	mg/L		05/23/17 09:22	06/01/17 19:36	1
Barium	**0.11**		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 19:11	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 19:11	1
Calcium	**120**		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 19:11	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 19:11	1
Cobalt	**0.024**		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 19:11	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 19:11	1
Molybdenum	**0.031**		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 19:11	1
Lead	**0.00076**	**J**	0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 19:11	1
Selenium	**0.0011**	**J**	0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 19:11	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:36	1
Lithium	**0.018**		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:36	1

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 19:16	1
Arsenic	**0.0041**	**J ^**	0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 19:16	1
Barium	**0.062**		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 19:16	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 19:16	1
Calcium	**150**		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 19:16	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 19:16	1
Cobalt	**0.0085**		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 19:16	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 19:16	1
Molybdenum	**0.0029**	**J**	0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 19:16	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 19:16	1
Selenium	ND		0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 19:16	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:40	1
Lithium	ND		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:40	1

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 19:20	1
Arsenic	**0.0019**	**J ^**	0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 19:20	1
Barium	**0.050**		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 19:20	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 19:20	1
Calcium	**110**		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 19:20	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 19:20	1
Cobalt	**0.0094**		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 19:20	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 19:20	1
Molybdenum	**0.15**		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 19:20	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 19:20	1
Selenium	**0.0012**	**J**	0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 19:20	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:44	1
Lithium	**0.022**		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:44	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 19:24	1
Arsenic	ND	^	0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 19:24	1
Barium	ND		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 19:24	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 19:24	1
Calcium	ND		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 19:24	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 19:24	1
Cobalt	ND		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 19:24	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 19:24	1
Molybdenum	ND		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 19:24	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 19:24	1
Selenium	ND		0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 19:24	1
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:48	1
Lithium	ND		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:48	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:34	1

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:41	1

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:43	1

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:46	1

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:52	1

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:54	1

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:57	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			05/19/17 18:59	1
Temperature	21.9	HF	1.0	1.0	Degrees C			05/19/17 18:59	1
Chloride	82	B	3.0	0.25	mg/L			06/13/17 11:07	1
Fluoride	0.98		0.50	0.060	mg/L			06/13/17 11:07	1
Sulfate	50	B	5.0	0.23	mg/L			06/13/17 11:07	1
Total Dissolved Solids (TDS)	420		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			05/23/17 18:16	1

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			05/19/17 19:04	1
Temperature	21.8	HF	1.0	1.0	Degrees C			05/19/17 19:04	1
Chloride	60	B	3.0	0.25	mg/L			06/13/17 11:25	1
Fluoride	3.0		0.50	0.060	mg/L			06/13/17 11:25	1
Sulfate	600	B	25	1.2	mg/L			06/13/17 16:01	5
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	1.6	J	4.0	1.1	mg/L			05/23/17 18:16	1

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			05/19/17 19:09	1
Temperature	21.7	HF	1.0	1.0	Degrees C			05/19/17 19:09	1
Chloride	64	B	3.0	0.25	mg/L			06/13/17 11:42	1
Fluoride	3.8		0.50	0.060	mg/L			06/13/17 11:42	1
Sulfate	660	B	25	1.2	mg/L			06/13/17 16:19	5
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	1.2	J	4.0	1.1	mg/L			05/23/17 18:16	1

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			05/19/17 19:14	1
Temperature	21.6	HF	1.0	1.0	Degrees C			05/19/17 19:14	1
Chloride	59	B	3.0	0.25	mg/L			06/13/17 12:00	1
Fluoride	2.4		0.50	0.060	mg/L			06/13/17 12:00	1
Sulfate	210	B	25	1.2	mg/L			06/13/17 16:37	5
Total Dissolved Solids (TDS)	900		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	8.8		4.0	1.1	mg/L			05/23/17 18:16	1

General Chemistry

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.5**	**HF**	0.1	0.1	SU			05/19/17 19:19	1
Temperature	**21.6**	**HF**	1.0	1.0	Degrees C			05/19/17 19:19	1
Chloride	**39**	**B**	3.0	0.25	mg/L			06/13/17 12:18	1
Fluoride	**0.54**		0.50	0.060	mg/L			06/13/17 12:18	1
Sulfate	**5.9**	**B**	5.0	0.23	mg/L			06/13/17 12:18	1
Total Dissolved Solids (TDS)	**900**		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	**22**		4.0	1.1	mg/L			05/23/17 18:16	1

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**8.0**	**HF**	0.1	0.1	SU			05/19/17 19:35	1
Temperature	**22.3**	**HF**	1.0	1.0	Degrees C			05/19/17 19:35	1
Chloride	**59**	**B**	3.0	0.25	mg/L			06/13/17 12:36	1
Fluoride	**3.0**		0.50	0.060	mg/L			06/13/17 12:36	1
Sulfate	**580**	**B**	25	1.2	mg/L			06/13/17 18:24	5
Total Dissolved Solids (TDS)	**1300**		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	**1.2**	**J**	4.0	1.1	mg/L			05/23/17 18:16	1

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**5.9**	**HF**	0.1	0.1	SU			06/14/17 13:18	1
Temperature	**22.7**	**HF**	1.0	1.0	Degrees C			06/14/17 13:18	1
Chloride	ND		3.0	0.25	mg/L			06/13/17 12:54	1
Fluoride	ND		0.50	0.060	mg/L			06/13/17 12:54	1
Sulfate	**7.7**	**B**	5.0	0.23	mg/L			06/13/17 12:54	1
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/23/17 09:54	1
Total Suspended Solids	ND		4.0	1.1	mg/L			05/23/17 18:16	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00445	U	0.0540	0.0540	1.00	0.113	pCi/L	05/25/17 07:45	06/16/17 17:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.9*		*40 - 110*	*05/25/17 07:45*	*06/16/17 17:57*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.167		0.0809	0.0823	1.00	0.0913	pCi/L	05/25/17 07:45	06/16/17 17:57	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110	05/25/17 07:45	06/16/17 17:57	1

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.132		0.0808	0.0817	1.00	0.109	pCi/L	05/25/17 07:45	06/16/17 17:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110	05/25/17 07:45	06/16/17 17:58	1

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.213		0.0870	0.0891	1.00	0.0770	pCi/L	05/25/17 07:45	06/16/17 17:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		40 - 110	05/25/17 07:45	06/16/17 17:58	1

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0626	U	0.0563	0.0565	1.00	0.0825	pCi/L	05/25/17 07:45	06/16/17 17:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110	05/25/17 07:45	06/16/17 17:58	1

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.121		0.0685	0.0694	1.00	0.0784	pCi/L	05/25/17 07:45	06/16/17 17:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.7		40 - 110	05/25/17 07:45	06/16/17 17:58	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00881	U	0.0531	0.0531	1.00	0.105	pCi/L	05/25/17 07:45	06/16/17 17:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*05/25/17 07:45*	*06/16/17 17:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0640	U	0.193	0.193	1.00	0.339	pCi/L	05/25/17 08:14	06/07/17 14:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.9*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:31*	*1*
Y Carrier	*85.6*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:31*	*1*

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.224	U	0.207	0.208	1.00	0.332	pCi/L	05/25/17 08:14	06/07/17 14:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:31*	*1*
Y Carrier	*91.6*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:31*	*1*

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.111	U	0.231	0.231	1.00	0.395	pCi/L	05/25/17 08:14	06/07/17 14:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:31*	*1*
Y Carrier	*87.1*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:31*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.129	U	0.222	0.222	1.00	0.378	pCi/L	05/25/17 08:14	06/07/17 14:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:29*	*1*
Y Carrier	*79.6*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:29*	*1*

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0289	U	0.197	0.197	1.00	0.350	pCi/L	05/25/17 08:14	06/07/17 14:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:29*	*1*
Y Carrier	*88.2*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:29*	*1*

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.301	U	0.251	0.253	1.00	0.401	pCi/L	05/25/17 08:14	06/07/17 14:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:30*	*1*
Y Carrier	*87.5*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:30*	*1*

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.258	U	0.233	0.235	1.00	0.374	pCi/L	05/25/17 08:14	06/07/17 14:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:30*	*1*
Y Carrier	*81.5*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:30*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P
Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0595	U	0.200	0.200	5.00	0.339	pCi/L		06/18/17 13:14	1

Client Sample ID: MW-9
Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.391**		0.222	0.223	5.00	0.332	pCi/L		06/18/17 13:14	1

Client Sample ID: MW-10
Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.243	U	0.245	0.245	5.00	0.395	pCi/L		06/18/17 13:14	1

Client Sample ID: MW-11
Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.342	U	0.238	0.239	5.00	0.378	pCi/L		06/18/17 13:14	1

Client Sample ID: MW-12
Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0916	U	0.205	0.205	5.00	0.350	pCi/L		06/18/17 13:14	1

Client Sample ID: MW-9FD
Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.422**		0.261	0.262	5.00	0.401	pCi/L		06/18/17 13:14	1

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-9EB
Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.267	U	0.239	0.241	5.00	0.374	pCi/L		06/18/17 13:14	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-280049/1-A
Matrix: Water
Analysis Batch: 280241

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.0081	mg/L		05/23/17 09:22	05/24/17 10:38	1

Lab Sample ID: LCS 240-280049/2-A
Matrix: Water
Analysis Batch: 280241

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.07		mg/L		107	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-280049/1-A
Matrix: Water
Analysis Batch: 281145

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		05/23/17 09:22	05/31/17 18:04	1
Arsenic	ND		0.0050	0.00075	mg/L		05/23/17 09:22	05/31/17 18:04	1
Barium	ND		0.0050	0.0022	mg/L		05/23/17 09:22	05/31/17 18:04	1
Beryllium	ND		0.0010	0.00031	mg/L		05/23/17 09:22	05/31/17 18:04	1
Calcium	ND		1.0	0.58	mg/L		05/23/17 09:22	05/31/17 18:04	1
Cadmium	ND		0.0010	0.00021	mg/L		05/23/17 09:22	05/31/17 18:04	1
Cobalt	ND		0.0010	0.00019	mg/L		05/23/17 09:22	05/31/17 18:04	1
Chromium	ND		0.0020	0.00098	mg/L		05/23/17 09:22	05/31/17 18:04	1
Molybdenum	ND		0.010	0.0011	mg/L		05/23/17 09:22	05/31/17 18:04	1
Lead	ND		0.0010	0.00045	mg/L		05/23/17 09:22	05/31/17 18:04	1
Selenium	ND		0.0050	0.00089	mg/L		05/23/17 09:22	05/31/17 18:04	1

Lab Sample ID: MB 240-280049/1-A
Matrix: Water
Analysis Batch: 281313

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.00020	mg/L		05/23/17 09:22	06/01/17 19:15	1
Lithium	ND		0.0080	0.0017	mg/L		05/23/17 09:22	06/01/17 19:15	1

Lab Sample ID: LCS 240-280049/3-A
Matrix: Water
Analysis Batch: 281145

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.110		mg/L		110	80 - 120
Arsenic	1.00	1.15		mg/L		115	80 - 120
Barium	1.00	1.08		mg/L		108	80 - 120
Beryllium	1.00	1.01		mg/L		101	80 - 120
Calcium	10.0	9.67		mg/L		97	80 - 120
Cadmium	1.00	1.03		mg/L		103	80 - 120
Cobalt	1.00	1.05		mg/L		105	80 - 120
Chromium	1.00	1.07		mg/L		107	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 240-280049/3-A
Matrix: Water
Analysis Batch: 281145

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	0.100	0.102		mg/L		102	80 - 120
Lead	1.00	1.07		mg/L		107	80 - 120
Selenium	1.00	0.975		mg/L		97	80 - 120

Lab Sample ID: LCS 240-280049/3-A
Matrix: Water
Analysis Batch: 281313

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	0.250	0.257		mg/L		103	80 - 120
Lithium	0.100	0.100		mg/L		100	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-375930/1-A
Matrix: Water
Analysis Batch: 376232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 375930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/05/17 10:58	06/05/17 15:06	1

Lab Sample ID: LCS 280-375930/2-A
Matrix: Water
Analysis Batch: 376232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00488		mg/L		98	84 - 120

Lab Sample ID: 280-97334-1 MS
Matrix: Water
Analysis Batch: 376232

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 375930

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00500	0.00486		mg/L		97	75 - 125

Lab Sample ID: 280-97334-1 MSD
Matrix: Water
Analysis Batch: 376232

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 375930

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00477		mg/L		95	75 - 125	2	20

Method: 9040B - pH

Lab Sample ID: LCS 280-374374/29
Matrix: Water
Analysis Batch: 374374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: LCS 280-374374/4
Matrix: Water
Analysis Batch: 374374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: LCS 280-377319/4
Matrix: Water
Analysis Batch: 377319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-97334-7 DU
Matrix: Water
Analysis Batch: 377319

Client Sample ID: MW-9EB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	5.9	HF	5.8		SU		2	5
Temperature	22.7	HF	22.2		Degrees C		2	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-377077/6
Matrix: Water
Analysis Batch: 377077

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.792	J	3.0	0.25	mg/L			06/13/17 10:25	1
Fluoride	ND		0.50	0.060	mg/L			06/13/17 10:25	1
Sulfate	0.676	J	5.0	0.23	mg/L			06/13/17 10:25	1

Lab Sample ID: LCS 280-377077/4
Matrix: Water
Analysis Batch: 377077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	101		mg/L		101	90 - 110
Fluoride	5.00	5.16		mg/L		103	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-377077/5
Matrix: Water
Analysis Batch: 377077

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	102		mg/L		102	90 - 110	1	10
Fluoride	5.00	5.22		mg/L		104	90 - 110	1	10
Sulfate	100	102		mg/L		102	90 - 110	1	10

Lab Sample ID: MRL 280-377077/3
Matrix: Water
Analysis Batch: 377077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.72	J	mg/L		109	50 - 150
Fluoride	0.200	0.166	J	mg/L		83	50 - 150
Sulfate	2.50	2.24	J	mg/L		90	50 - 150

Lab Sample ID: 280-97334-5 MS
Matrix: Water
Analysis Batch: 377077

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	39	B	25.0	65.1		mg/L		103	80 - 120
Fluoride	0.54		5.00	5.57		mg/L		101	80 - 120
Sulfate	5.9	B	25.0	30.2		mg/L		97	80 - 120

Lab Sample ID: 280-97334-5 MSD
Matrix: Water
Analysis Batch: 377077

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	39	B	25.0	65.8		mg/L		106	80 - 120	1	20
Fluoride	0.54		5.00	5.72		mg/L		104	80 - 120	3	20
Sulfate	5.9	B	25.0	30.6		mg/L		99	80 - 120	1	20

Lab Sample ID: 280-97334-5 DU
Matrix: Water
Analysis Batch: 377077

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	39	B	38.8		mg/L		1	15
Fluoride	0.54		0.516		mg/L		5	15
Sulfate	5.9	B	3.55	J F5	mg/L		50	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-374678/1
Matrix: Water
Analysis Batch: 374678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/23/17 09:54	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 280-374678/2
Matrix: Water
Analysis Batch: 374678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	497		mg/L		99	86 - 110

Lab Sample ID: 280-97334-7 DU
Matrix: Water
Analysis Batch: 374678

Client Sample ID: MW-9EB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	ND		ND		mg/L		NC	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-374756/3
Matrix: Water
Analysis Batch: 374756

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/23/17 18:16	1

Lab Sample ID: LCS 280-374756/1
Matrix: Water
Analysis Batch: 374756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	94.0		mg/L		94	86 - 114

Lab Sample ID: LCSD 280-374756/2
Matrix: Water
Analysis Batch: 374756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	100	95.2		mg/L		95	86 - 114	1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-310434/1-A
Matrix: Water
Analysis Batch: 313774

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310434

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.003937	U	0.0550	0.0550	1.00	0.109	pCi/L	05/25/17 07:45	06/16/17 17:55	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*05/25/17 07:45*	*06/16/17 17:55*	*1*

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-310434/2-A
Matrix: Water
Analysis Batch: 313774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310434

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	10.45		1.08	1.00	0.0913	pCi/L	92	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.9*		*40 - 110*

Lab Sample ID: LCSD 160-310434/3-A
Matrix: Water
Analysis Batch: 313774

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310434

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	10.02		1.04	1.00	0.107	pCi/L	88	68 - 137	0.20	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-310440/1-A
Matrix: Water
Analysis Batch: 312165

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310440

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2683	U	0.230	0.231	1.00	0.367	pCi/L	05/25/17 08:14	06/07/17 14:32	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:32*	*1*
Y Carrier	*85.2*		*40 - 110*	*05/25/17 08:14*	*06/07/17 14:32*	*1*

Lab Sample ID: LCS 160-310440/2-A
Matrix: Water
Analysis Batch: 312165

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310440

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.3	14.35		1.54	1.00	0.360	pCi/L	108	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.9*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-310440/3-A
Matrix: Water
Analysis Batch: 312165

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310440

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.3	14.69		1.58	1.00	0.388	pCi/L	110	56 - 140	0.11	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*
Y Carrier	*84.5*		*40 - 110*

Metals

Prep Batch: 280049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total Recoverable	Water	3005A	
280-97334-2	MW-9	Total Recoverable	Water	3005A	
280-97334-3	MW-10	Total Recoverable	Water	3005A	
280-97334-4	MW-11	Total Recoverable	Water	3005A	
280-97334-5	MW-12	Total Recoverable	Water	3005A	
280-97334-6	MW-9FD	Total Recoverable	Water	3005A	
280-97334-7	MW-9EB	Total Recoverable	Water	3005A	
MB 240-280049/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-280049/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-280049/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 280241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total Recoverable	Water	6010C	280049
280-97334-2	MW-9	Total Recoverable	Water	6010C	280049
280-97334-3	MW-10	Total Recoverable	Water	6010C	280049
280-97334-4	MW-11	Total Recoverable	Water	6010C	280049
280-97334-5	MW-12	Total Recoverable	Water	6010C	280049
280-97334-6	MW-9FD	Total Recoverable	Water	6010C	280049
280-97334-7	MW-9EB	Total Recoverable	Water	6010C	280049
MB 240-280049/1-A	Method Blank	Total Recoverable	Water	6010C	280049
LCS 240-280049/2-A	Lab Control Sample	Total Recoverable	Water	6010C	280049

Analysis Batch: 281145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total Recoverable	Water	6020A	280049
280-97334-2	MW-9	Total Recoverable	Water	6020A	280049
280-97334-3	MW-10	Total Recoverable	Water	6020A	280049
280-97334-4	MW-11	Total Recoverable	Water	6020A	280049
280-97334-5	MW-12	Total Recoverable	Water	6020A	280049
280-97334-6	MW-9FD	Total Recoverable	Water	6020A	280049
280-97334-7	MW-9EB	Total Recoverable	Water	6020A	280049
MB 240-280049/1-A	Method Blank	Total Recoverable	Water	6020A	280049
LCS 240-280049/3-A	Lab Control Sample	Total Recoverable	Water	6020A	280049

Analysis Batch: 281313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total Recoverable	Water	6020A	280049
280-97334-2	MW-9	Total Recoverable	Water	6020A	280049
280-97334-3	MW-10	Total Recoverable	Water	6020A	280049
280-97334-4	MW-11	Total Recoverable	Water	6020A	280049
280-97334-5	MW-12	Total Recoverable	Water	6020A	280049
280-97334-6	MW-9FD	Total Recoverable	Water	6020A	280049
280-97334-7	MW-9EB	Total Recoverable	Water	6020A	280049
MB 240-280049/1-A	Method Blank	Total Recoverable	Water	6020A	280049
LCS 240-280049/3-A	Lab Control Sample	Total Recoverable	Water	6020A	280049

Prep Batch: 375930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	7470A	
280-97334-2	MW-9	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 375930 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-3	MW-10	Total/NA	Water	7470A	
280-97334-4	MW-11	Total/NA	Water	7470A	
280-97334-5	MW-12	Total/NA	Water	7470A	
280-97334-6	MW-9FD	Total/NA	Water	7470A	
280-97334-7	MW-9EB	Total/NA	Water	7470A	
MB 280-375930/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-375930/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-97334-1 MS	MW-1P	Total/NA	Water	7470A	
280-97334-1 MSD	MW-1P	Total/NA	Water	7470A	

Analysis Batch: 376232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	7470A	375930
280-97334-2	MW-9	Total/NA	Water	7470A	375930
280-97334-3	MW-10	Total/NA	Water	7470A	375930
280-97334-4	MW-11	Total/NA	Water	7470A	375930
280-97334-5	MW-12	Total/NA	Water	7470A	375930
280-97334-6	MW-9FD	Total/NA	Water	7470A	375930
280-97334-7	MW-9EB	Total/NA	Water	7470A	375930
MB 280-375930/1-A	Method Blank	Total/NA	Water	7470A	375930
LCS 280-375930/2-A	Lab Control Sample	Total/NA	Water	7470A	375930
280-97334-1 MS	MW-1P	Total/NA	Water	7470A	375930
280-97334-1 MSD	MW-1P	Total/NA	Water	7470A	375930

General Chemistry

Analysis Batch: 374374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	9040B	
280-97334-2	MW-9	Total/NA	Water	9040B	
280-97334-3	MW-10	Total/NA	Water	9040B	
280-97334-4	MW-11	Total/NA	Water	9040B	
280-97334-5	MW-12	Total/NA	Water	9040B	
280-97334-6	MW-9FD	Total/NA	Water	9040B	
LCS 280-374374/29	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-374374/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 374678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	SM 2540C	
280-97334-2	MW-9	Total/NA	Water	SM 2540C	
280-97334-3	MW-10	Total/NA	Water	SM 2540C	
280-97334-4	MW-11	Total/NA	Water	SM 2540C	
280-97334-5	MW-12	Total/NA	Water	SM 2540C	
280-97334-6	MW-9FD	Total/NA	Water	SM 2540C	
280-97334-7	MW-9EB	Total/NA	Water	SM 2540C	
MB 280-374678/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-374678/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-97334-7 DU	MW-9EB	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 374756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	SM 2540D	
280-97334-2	MW-9	Total/NA	Water	SM 2540D	
280-97334-3	MW-10	Total/NA	Water	SM 2540D	
280-97334-4	MW-11	Total/NA	Water	SM 2540D	
280-97334-5	MW-12	Total/NA	Water	SM 2540D	
280-97334-6	MW-9FD	Total/NA	Water	SM 2540D	
280-97334-7	MW-9EB	Total/NA	Water	SM 2540D	
MB 280-374756/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-374756/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-374756/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 377077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	9056A	
280-97334-2	MW-9	Total/NA	Water	9056A	
280-97334-2	MW-9	Total/NA	Water	9056A	
280-97334-3	MW-10	Total/NA	Water	9056A	
280-97334-3	MW-10	Total/NA	Water	9056A	
280-97334-4	MW-11	Total/NA	Water	9056A	
280-97334-4	MW-11	Total/NA	Water	9056A	
280-97334-5	MW-12	Total/NA	Water	9056A	
280-97334-6	MW-9FD	Total/NA	Water	9056A	
280-97334-6	MW-9FD	Total/NA	Water	9056A	
280-97334-7	MW-9EB	Total/NA	Water	9056A	
MB 280-377077/6	Method Blank	Total/NA	Water	9056A	
LCS 280-377077/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-377077/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-377077/3	Lab Control Sample	Total/NA	Water	9056A	
280-97334-5 MS	MW-12	Total/NA	Water	9056A	
280-97334-5 MSD	MW-12	Total/NA	Water	9056A	
280-97334-5 DU	MW-12	Total/NA	Water	9056A	

Analysis Batch: 377319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-7	MW-9EB	Total/NA	Water	9040B	
LCS 280-377319/4	Lab Control Sample	Total/NA	Water	9040B	
280-97334-7 DU	MW-9EB	Total/NA	Water	9040B	

Rad

Prep Batch: 310434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	PrecSep-21	
280-97334-2	MW-9	Total/NA	Water	PrecSep-21	
280-97334-3	MW-10	Total/NA	Water	PrecSep-21	
280-97334-4	MW-11	Total/NA	Water	PrecSep-21	
280-97334-5	MW-12	Total/NA	Water	PrecSep-21	
280-97334-6	MW-9FD	Total/NA	Water	PrecSep-21	
280-97334-7	MW-9EB	Total/NA	Water	PrecSep-21	
MB 160-310434/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 310434 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-310434/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-310434/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 310440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97334-1	MW-1P	Total/NA	Water	PrecSep_0	
280-97334-2	MW-9	Total/NA	Water	PrecSep_0	
280-97334-3	MW-10	Total/NA	Water	PrecSep_0	
280-97334-4	MW-11	Total/NA	Water	PrecSep_0	
280-97334-5	MW-12	Total/NA	Water	PrecSep_0	
280-97334-6	MW-9FD	Total/NA	Water	PrecSep_0	
280-97334-7	MW-9EB	Total/NA	Water	PrecSep_0	
MB 160-310440/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-310440/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-310440/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-1P

Date Collected: 05/18/17 14:25
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:21	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 18:58	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:23	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:34	CDH	TAL DEN
Total/NA	Analysis	9040B		1			374374	05/19/17 18:59	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 11:07	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.82 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313774	06/16/17 17:57	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.82 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312165	06/07/17 14:31	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 05/18/17 15:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:25	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 19:03	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:27	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:41	CDH	TAL DEN
Total/NA	Analysis	9040B		1			374374	05/19/17 19:04	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 11:25	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	377077	06/13/17 16:01	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.27 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313774	06/16/17 17:57	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.27 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312165	06/07/17 14:31	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-10

Date Collected: 05/17/17 16:35
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:30	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 19:07	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:31	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:43	CDH	TAL DEN
Total/NA	Analysis	9040B		1			374374	05/19/17 19:09	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 11:42	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	377077	06/13/17 16:19	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.97 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313771	06/16/17 17:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.97 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312165	06/07/17 14:31	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Client Sample ID: MW-11

Date Collected: 05/17/17 14:00
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:34	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 19:11	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:36	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:46	CDH	TAL DEN
Total/NA	Analysis	9040B		1			374374	05/19/17 19:14	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 12:00	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	377077	06/13/17 16:37	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.75 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313771	06/16/17 17:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.75 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312271	06/07/17 14:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-12

Date Collected: 05/17/17 15:05
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:47	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 19:16	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:40	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:52	CDH	TAL DEN
Total/NA	Analysis	9040B		1			374374	05/19/17 19:19	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 12:18	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.72 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313771	06/16/17 17:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.72 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312271	06/07/17 14:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Client Sample ID: MW-9FD

Date Collected: 05/18/17 16:55
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:52	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 19:20	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:44	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:54	CDH	TAL DEN
Total/NA	Analysis	9040B		1			374374	05/19/17 19:35	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 12:36	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	377077	06/13/17 18:24	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.21 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313771	06/16/17 17:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.21 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312271	06/07/17 14:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Client Sample ID: MW-9EB

Date Collected: 05/18/17 16:15
Date Received: 05/19/17 09:26

Lab Sample ID: 280-97334-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280241	05/24/17 11:56	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281145	05/31/17 19:24	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280049	05/23/17 09:22	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			281313	06/01/17 19:48	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375930	06/05/17 10:58	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376232	06/05/17 15:57	CDH	TAL DEN
Total/NA	Analysis	9040B		1			377319	06/14/17 13:18	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377077	06/13/17 12:54	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374678	05/23/17 09:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	374756	05/23/17 18:16	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.14 mL	1.0 g	310434	05/25/17 07:45	LDE	TAL SL
Total/NA	Analysis	9315		1			313771	06/16/17 17:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.14 mL	1.0 g	310440	05/25/17 08:14	LDE	TAL SL
Total/NA	Analysis	9320		1			312271	06/07/17 14:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313879	06/18/17 13:14	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-18
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17 *
Illinois	NELAP	5	200004	07-31-17 *
Kansas	NELAP	7	E-10336	01-31-18
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17
Minnesota	NELAP	5	039-999-348	12-31-17
Minnesota (Petrofund)	State Program	1	3506	07-31-17 *
Nevada	State Program	9	OH-000482008A	07-31-17 *
New Jersey	NELAP	2	OH001	06-30-17 *
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-17 *
Texas	NELAP	6	T104704517-15-5	08-31-17 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-18
West Virginia DEP	State Program	3	210	12-31-17
Wisconsin	State Program	5	999518190	08-31-17 *

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-17 *
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17 *
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: T. Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-633-2380(Tel)~~ 303-351-2138	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Unit 6 MW-1~~ MW-1P	5/18/17	1425	G	Water		N	X	X	X	X	X		
MW-7				Water		N							
MW-1				Water		N							
MW-3				Water		N							
MW-4				Water		N							
MW-6				Water		N							
MW-8				Water		N							
MW-9	5/18/17	1555	G	Water		N	X	X	X	X	X		
MW-10	5/17/17	1635	G	Water		N	X	X	X	X	X		
MW-11	5/17/17	1400	G	Water		N	X	X	X	X	X		
MW-12	5/17/17	1509	G	Water		N	X	X	X	X	X		

280-97334 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/19/17 0926	HDR		5/19/17 0926	TKO
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.3, 2.9, 4.3 IR#7 0.0 Transfer RP 5-19-17

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: T. Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-633-2380(Tel)~~ 303-351-2139	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Field Duplicate~~ MW-9FD	5/18/17	1655	G	Water		N	X	X	X	X	X		
~~Equipment Blank~~ MW-9EB	5/18/17	1615	G	Water		N	X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	5/19/17 0926	HDR		5/19/17 0926	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

6/19/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-97334 Chain of Custody

tAmerica
ER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K		280-97334.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-97334-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/19/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	R226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1P (280-97334-1)	5/18/17	14:25 Mountain		Water			X	X	X	2	
MW-9 (280-97334-2)	5/18/17	15:55 Mountain		Water			X	X	X	2	
MW-10 (280-97334-3)	5/17/17	16:35 Mountain		Water			X	X	X	2	
MW-11 (280-97334-4)	5/17/17	14:00 Mountain		Water			X	X	X	2	
MW-12 (280-97334-5)	5/17/17	15:05 Mountain		Water			X	X	X	2	
MW-9FD (280-97334-6)	5/18/17	16:55 Mountain		Water			X	X	X	2	
MW-9EB (280-97334-7)	5/18/17	16:15 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 5/19/17 1570	Company TAD	Received by:	Date/Time: 052017 0846	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

6/19/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

15.6/15.3

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-399310.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-97334-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 6/14/2017			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1P (280-97334-1)	5/18/17	14:25 Mountain		Water			X	X	1	, Use Collision Cell
MW-9 (280-97334-2)	5/18/17	15:55 Mountain		Water			X	X	1	Use Collision Cell
MW-10 (280-97334-3)	5/17/17	16:35 Mountain		Water			X	X	1	, Use Collision Cell
MW-11 (280-97334-4)	5/17/17	14:00 Mountain		Water			X	X	1	Use Collision Cell
MW-12 (280-97334-5)	5/17/17	15:05 Mountain		Water			X	X	1	, Use Collision Cell
MW-9FD (280-97334-6)	5/18/17	16:55 Mountain		Water			X	X	1	Use Collision Cell
MW-9EB (280-97334-7)	5/18/17	16:15 Mountain		Water			X	X	1	, Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Rothmeyer	5/19/17 1540	TAL		5-20-17 930	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

6/19/2017

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____

Canton Facility

Client TA DENVER Site Name _____ Cooler unpacked by: POP

Cooler Received on 5-20-17 Opened on 5-20-17

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

☐ See Multiple Cooler Form

1. Cooler temperature upon receipt
   IR GUN# IR-8 (CF **-0.3** °C) Observed Cooler Temp. 15.6 °C Corrected Cooler Temp. 15.3 °C
   IR GUN #36 (CF **+0.8**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 11-15 have been checked at the originating laboratory.		
11. Were sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# **HC697954**
12. Were VOAs on the COC?	Yes	No
13. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
15. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

17. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-97334-1

Login Number: 97334
List Number: 1
Creator: Pottruff, Reed W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	N/A	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-97334-1

Login Number: 97334
List Number: 2
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 05/20/17 11:37 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8, 21.0, 2.4
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?	N/A	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97334-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-97334-1	MW-1P	87.9
280-97334-2	MW-9	92.6
280-97334-3	MW-10	92.9
280-97334-4	MW-11	85.5
280-97334-5	MW-12	92.9
280-97334-6	MW-9FD	89.7
280-97334-7	MW-9EB	90.9
LCS 160-310434/2-A	Lab Control Sample	95.9
LCSD 160-310434/3-A	Lab Control Sample Dup	95.3
MB 160-310434/1-A	Method Blank	97.1

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-97334-1	MW-1P	87.9	85.6
280-97334-2	MW-9	92.6	91.6
280-97334-3	MW-10	92.9	87.1
280-97334-4	MW-11	85.5	79.6
280-97334-5	MW-12	92.9	88.2
280-97334-6	MW-9FD	89.7	87.5
280-97334-7	MW-9EB	90.9	81.5
LCS 160-310440/2-A	Lab Control Sample	95.9	87.5
LCSD 160-310440/3-A	Lab Control Sample Dup	95.3	84.5
MB 160-310440/1-A	Method Blank	97.1	85.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-97452-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
6/22/2017 12:56:49 PM
Jamie Ide, Project Manager I
(303)736-0126
jamie.ide@testamericainc.com

Designee for

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

LINKS

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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.

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

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)

Job ID: 280-97452-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-97452-1

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.

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.

RECEIPT

The samples were received on 5/23/2017 10:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.6° C and 3.6° C.

The turnaround time for the analysis TestAmerica St. Louis is performing has been logged as the standard 22 business days; however, please note that the data may be 8 business days late due to current laboratory capacity. We do apologize for any inconvenience this may cause.

TOTAL RECOVERABLE METALS

Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/25/2017 and analyzed on 05/26/2017.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/25/2017 and analyzed on 05/27/2017 and 05/31/2017.

Calcium failed the recovery criteria low for the MSD of sample MW-7 (280-97452-1) in batch 240-280781.

Sample MW-3 (280-97452-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The continuing calibration verification (CCV) associated with batch 240-280781 recovered above the upper control limit for Arsenic. The samples associated with this CCV were below the requested reporting limit for the affected analyte; therefore, the data have been reported.

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

TOTAL MERCURY

Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 06/07/2017.

Job ID: 280-97452-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

TOTAL DISSOLVED SOLIDS
Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 05/25/2017.

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

TOTAL SUSPENDED SOLIDS
Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 05/25/2017.

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

CORROSIVITY (PH)
Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 06/09/2017.

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

ANIONS (28 DAYS)
Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 06/15/2017.

Sulfate was detected in method blank MB 280-377255/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Sulfate was detected in method blank MB 280-377418/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Samples MW-1 (280-97452-2)[5X], MW-3 (280-97452-3)[20X], MW-4 (280-97452-4)[10X], MW-4 (280-97452-4)[50X], MW-6 (280-97452-5)[5X] and MW-8 (280-97452-6)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)
Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 05/26/2017 and analyzed on 06/21/2017.

The following sample bubbled up after the addition of nitric acid: MW-3 (280-97452-3).

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

RADIUM-228
Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 05/30/2017 and analyzed on 06/12/2017.

The following sample bubbled up after the addition of sulfuric acid: MW-3 (280-97452-3).

Job ID: 280-97452-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-7 (280-97452-1), MW-1 (280-97452-2), MW-3 (280-97452-3), MW-4 (280-97452-4), MW-6 (280-97452-5) and MW-8 (280-97452-6) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 06/22/2017.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-7 — Lab Sample ID: 280-97452-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.53		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.0013	J	0.0020	0.00057	mg/L	1		6020A	Total Recoverable
Arsenic	0.0014	J	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.035		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	44		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cadmium	0.00034	J	0.0010	0.00021	mg/L	1		6020A	Total Recoverable
Cobalt	0.0014		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0047		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0058	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.0029		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.0052		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.049		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	53		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.34	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	130	B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	860		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	150		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-97452-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.34		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.0012	J	0.0020	0.00057	mg/L	1		6020A	Total Recoverable
Arsenic	0.0013	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.087		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	79		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cadmium	0.00040	J	0.0010	0.00021	mg/L	1		6020A	Total Recoverable
Cobalt	0.0014		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0018	J	0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.00084	J	0.0010	0.00045	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-1 (Continued) — Lab Sample ID: 280-97452-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0022	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.030		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	67		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.34	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	280	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	870		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	50		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-97452-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.6		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Barium	0.013		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	590		2.0	1.2	mg/L	2		6020A	Total Recoverable
Cadmium	0.00028	J	0.0010	0.00021	mg/L	1		6020A	Total Recoverable
Cobalt	0.00071	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0012	J	0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0013	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.00054	J	0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.0024	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.089		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	45		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.13	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2400	B	100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3900		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	10		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-97452-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.019		0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.031		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	410		1.0	0.58	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-4 (Continued) — Lab Sample ID: 280-97452-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0021		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0042		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.016		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.0018		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.26		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.23		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	510		30	2.5	mg/L	10		9056A	Total/NA
Fluoride	3.9		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	5900	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	7700		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	52		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-97452-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.48		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0050		0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.12		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Beryllium	0.00042	J	0.0010	0.00031	mg/L	1		6020A	Total Recoverable
Calcium	380		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cadmium	0.00027	J	0.0010	0.00021	mg/L	1		6020A	Total Recoverable
Cobalt	0.0044		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.025		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0030	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.0086		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.022		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.077		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	730		15	1.3	mg/L	5		9056A	Total/NA
Fluoride	0.15	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	630	B	25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	55		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-8

Lab Sample ID: 280-97452-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.93		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0024	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.050		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	480		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0023		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0075		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Lead	0.0029		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.13		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	130		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.14	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	2800	B	100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3800		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	74		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-97452-1	MW-7	Water	05/22/17 14:10	05/23/17 10:25
280-97452-2	MW-1	Water	05/23/17 08:50	05/23/17 10:25
280-97452-3	MW-3	Water	05/22/17 10:30	05/23/17 10:25
280-97452-4	MW-4	Water	05/22/17 15:00	05/23/17 10:25
280-97452-5	MW-6	Water	05/22/17 12:45	05/23/17 10:25
280-97452-6	MW-8	Water	05/22/17 13:30	05/23/17 10:25

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.53		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 14:33	1

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 14:46	1

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 14:50	1

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 14:55	1

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 15:00	1

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.93		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 15:04	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0013	J	0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 14:49	1
Arsenic	0.0014	J	0.0050	0.00075	mg/L		05/25/17 14:00	05/27/17 14:49	1
Barium	0.035		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 14:49	1
Beryllium	ND		0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 14:49	1
Calcium	44		1.0	0.58	mg/L		05/25/17 14:00	05/27/17 14:49	1
Cadmium	0.00034	J	0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 14:49	1
Cobalt	0.0014		0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 14:49	1
Chromium	0.0047		0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 14:49	1
Molybdenum	0.0058	J	0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 14:49	1
Lead	0.0029		0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 14:49	1
Selenium	0.0052		0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 14:49	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 14:49	1
Lithium	0.049		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 14:49	1

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0012	J	0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 15:18	1
Arsenic	0.0013	J ^	0.0050	0.00075	mg/L		05/25/17 14:00	05/27/17 15:18	1
Barium	0.087		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 15:18	1
Beryllium	ND		0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 15:18	1
Calcium	79		1.0	0.58	mg/L		05/25/17 14:00	05/27/17 15:18	1
Cadmium	0.00040	J	0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 15:18	1
Cobalt	0.0014		0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 15:18	1
Chromium	0.0018	J	0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 15:18	1
Molybdenum	0.015		0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 15:18	1
Lead	0.00084	J	0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 15:18	1
Selenium	0.0022	J	0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 15:18	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 15:18	1
Lithium	0.030		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 15:18	1

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 15:22	1
Arsenic	ND	^	0.0050	0.00075	mg/L		05/25/17 14:00	05/27/17 15:22	1
Barium	0.013		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 15:22	1
Beryllium	ND		0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 15:22	1
Calcium	590		2.0	1.2	mg/L		05/25/17 14:00	05/31/17 00:17	2
Cadmium	0.00028	J	0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 15:22	1
Cobalt	0.00071	J	0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 15:22	1
Chromium	0.0012	J	0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 15:22	1
Molybdenum	0.0013	J	0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 15:22	1
Lead	0.00054	J	0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 15:22	1
Selenium	0.0024	J	0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 15:22	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 15:22	1
Lithium	0.089		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 15:22	1

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 15:26	1
Arsenic	0.019		0.0050	0.00075	mg/L		05/25/17 14:00	05/31/17 00:21	1
Barium	0.031		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 15:26	1
Beryllium	ND		0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 15:26	1
Calcium	410		1.0	0.58	mg/L		05/25/17 14:00	05/27/17 15:26	1
Cadmium	ND		0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 15:26	1
Cobalt	0.0021		0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 15:26	1
Chromium	0.0042		0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 15:26	1
Molybdenum	0.016		0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 15:26	1
Lead	0.0018		0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 15:26	1
Selenium	0.26		0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 15:26	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 15:26	1
Lithium	0.23		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 15:26	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 15:30	1
Arsenic	**0.0050**		0.0050	0.00075	mg/L		05/25/17 14:00	05/31/17 00:25	1
Barium	**0.12**		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 15:30	1
Beryllium	**0.00042**	**J**	0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 15:30	1
Calcium	**380**		1.0	0.58	mg/L		05/25/17 14:00	05/27/17 15:30	1
Cadmium	**0.00027**	**J**	0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 15:30	1
Cobalt	**0.0044**		0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 15:30	1
Chromium	**0.025**		0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 15:30	1
Molybdenum	**0.0030**	**J**	0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 15:30	1
Lead	**0.0086**		0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 15:30	1
Selenium	**0.022**		0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 15:30	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 15:30	1
Lithium	**0.077**		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 15:30	1

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 15:34	1
Arsenic	**0.0024**	**J ^**	0.0050	0.00075	mg/L		05/25/17 14:00	05/27/17 15:34	1
Barium	**0.050**		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 15:34	1
Beryllium	ND		0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 15:34	1
Calcium	**480**		1.0	0.58	mg/L		05/25/17 14:00	05/27/17 15:34	1
Cadmium	ND		0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 15:34	1
Cobalt	**0.0023**		0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 15:34	1
Chromium	**0.0075**		0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 15:34	1
Molybdenum	ND		0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 15:34	1
Lead	**0.0029**		0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 15:34	1
Selenium	**0.011**		0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 15:34	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 15:34	1
Lithium	**0.13**		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 15:34	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:13	1

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:15	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:22	1

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:24	1

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:26	1

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:29	1

General Chemistry

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			06/09/17 16:05	1
Temperature	23.2	HF	1.0	1.0	Degrees C			06/09/17 16:05	1
Chloride	53		3.0	0.25	mg/L			06/15/17 01:48	1
Fluoride	0.34	J	0.50	0.060	mg/L			06/15/17 01:48	1
Sulfate	130	B	5.0	0.23	mg/L			06/15/17 01:48	1
Total Dissolved Solids (TDS)	860		10	4.7	mg/L			05/25/17 08:12	1
Total Suspended Solids	150		4.0	1.1	mg/L			05/25/17 15:55	1

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			06/09/17 16:10	1
Temperature	23.0	HF	1.0	1.0	Degrees C			06/09/17 16:10	1
Chloride	67		3.0	0.25	mg/L			06/15/17 02:23	1
Fluoride	0.34	J	0.50	0.060	mg/L			06/15/17 02:23	1
Sulfate	280	B	25	1.2	mg/L			06/15/17 02:40	5
Total Dissolved Solids (TDS)	870		10	4.7	mg/L			05/25/17 08:12	1
Total Suspended Solids	50		4.0	1.1	mg/L			05/25/17 15:55	1

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			06/09/17 16:15	1

General Chemistry (Continued)

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	22.8	HF	1.0	1.0	Degrees C			06/09/17 16:15	1
Chloride	45		3.0	0.25	mg/L			06/15/17 03:33	1
Fluoride	0.13	J	0.50	0.060	mg/L			06/15/17 03:33	1
Sulfate	2400	B	100	4.6	mg/L			06/15/17 19:48	20
Total Dissolved Solids (TDS)	3900		20	9.4	mg/L			05/25/17 08:12	1
Total Suspended Solids	10		4.0	1.1	mg/L			05/25/17 15:55	1

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			06/09/17 16:20	1
Temperature	22.9	HF	1.0	1.0	Degrees C			06/09/17 16:20	1
Chloride	510		30	2.5	mg/L			06/15/17 04:25	10
Fluoride	3.9		0.50	0.060	mg/L			06/15/17 04:08	1
Sulfate	5900	B	250	12	mg/L			06/15/17 20:05	50
Total Dissolved Solids (TDS)	7700		40	19	mg/L			05/25/17 08:12	1
Total Suspended Solids	52		4.0	1.1	mg/L			05/25/17 15:55	1

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			06/09/17 16:25	1
Temperature	23.0	HF	1.0	1.0	Degrees C			06/09/17 16:25	1
Chloride	730		15	1.3	mg/L			06/15/17 05:00	5
Fluoride	0.15	J	0.50	0.060	mg/L			06/15/17 04:43	1
Sulfate	630	B	25	1.2	mg/L			06/15/17 05:00	5
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L			05/25/17 08:12	1
Total Suspended Solids	55		4.0	1.1	mg/L			05/25/17 15:55	1

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			06/09/17 16:41	1
Temperature	24.0	HF	1.0	1.0	Degrees C			06/09/17 16:41	1
Chloride	130		3.0	0.25	mg/L			06/15/17 05:18	1
Fluoride	0.14	J	0.50	0.060	mg/L			06/15/17 05:18	1
Sulfate	2800	B	100	4.6	mg/L			06/15/17 20:23	20
Total Dissolved Solids (TDS)	3800		20	9.4	mg/L			05/25/17 08:12	1
Total Suspended Solids	74		4.0	1.1	mg/L			05/25/17 15:55	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.279		0.0961	0.0994	1.00	0.0743	pCi/L	05/26/17 12:50	06/21/17 08:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110	05/26/17 12:50	06/21/17 08:24	1

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.216		0.0925	0.0945	1.00	0.0887	pCi/L	05/26/17 12:50	06/21/17 08:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	05/26/17 12:50	06/21/17 08:24	1

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.563		0.136	0.146	1.00	0.0766	pCi/L	05/26/17 12:50	06/21/17 08:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110	05/26/17 12:50	06/21/17 08:24	1

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.366		0.103	0.108	1.00	0.0848	pCi/L	05/26/17 12:50	06/21/17 08:25	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	05/26/17 12:50	06/21/17 08:25	1

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.246		0.0948	0.0973	1.00	0.0939	pCi/L	05/26/17 12:50	06/21/17 08:25	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110	05/26/17 12:50	06/21/17 08:25	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.506**		0.125	0.133	1.00	0.102	pCi/L	05/26/17 12:50	06/21/17 08:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*05/26/17 12:50*	*06/21/17 08:25*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.306	U	0.252	0.254	1.00	0.402	pCi/L	05/30/17 08:09	06/12/17 14:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*
Y Carrier	*82.2*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0418	U	0.194	0.194	1.00	0.342	pCi/L	05/30/17 08:09	06/12/17 14:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*
Y Carrier	*82.6*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.659**		0.248	0.255	1.00	0.340	pCi/L	05/30/17 08:09	06/12/17 14:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*
Y Carrier	*84.5*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.503**		0.222	0.227	1.00	0.312	pCi/L	05/30/17 08:09	06/12/17 14:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*
Y Carrier	*81.1*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.204	U	0.250	0.251	1.00	0.414	pCi/L	05/30/17 08:09	06/12/17 14:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*
Y Carrier	*78.9*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:25*	*1*

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.649**		0.282	0.288	1.00	0.406	pCi/L	05/30/17 08:09	06/12/17 14:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:24*	*1*
Y Carrier	*76.6*		*40 - 110*	*05/30/17 08:09*	*06/12/17 14:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-7
Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.585**		0.270	0.272	5.00	0.402	pCi/L		06/22/17 12:52	1

Client Sample ID: MW-1
Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.258	U	0.215	0.216	5.00	0.342	pCi/L		06/22/17 12:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-3
Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.22		0.283	0.294	5.00	0.340	pCi/L		06/22/17 12:52	1

Client Sample ID: MW-4
Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.869		0.245	0.251	5.00	0.312	pCi/L		06/22/17 12:52	1

Client Sample ID: MW-6
Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.450		0.268	0.269	5.00	0.414	pCi/L		06/22/17 12:52	1

Client Sample ID: MW-8
Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.15		0.308	0.317	5.00	0.406	pCi/L		06/22/17 12:52	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-280421/1-A
Matrix: Water
Analysis Batch: 280625

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280421

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.0081	mg/L		05/25/17 14:00	05/26/17 12:51	1

Lab Sample ID: LCS 240-280421/2-A
Matrix: Water
Analysis Batch: 280625

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280421

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.06		mg/L		106	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-280421/1-A
Matrix: Water
Analysis Batch: 280781

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280421

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		05/25/17 14:00	05/27/17 14:40	1
Arsenic	ND		0.0050	0.00075	mg/L		05/25/17 14:00	05/27/17 14:40	1
Barium	ND		0.0050	0.0022	mg/L		05/25/17 14:00	05/27/17 14:40	1
Beryllium	ND		0.0010	0.00031	mg/L		05/25/17 14:00	05/27/17 14:40	1
Calcium	ND		1.0	0.58	mg/L		05/25/17 14:00	05/27/17 14:40	1
Cadmium	ND		0.0010	0.00021	mg/L		05/25/17 14:00	05/27/17 14:40	1
Cobalt	ND		0.0010	0.00019	mg/L		05/25/17 14:00	05/27/17 14:40	1
Chromium	ND		0.0020	0.00098	mg/L		05/25/17 14:00	05/27/17 14:40	1
Molybdenum	ND		0.010	0.0011	mg/L		05/25/17 14:00	05/27/17 14:40	1
Lead	ND		0.0010	0.00045	mg/L		05/25/17 14:00	05/27/17 14:40	1
Selenium	ND		0.0050	0.00089	mg/L		05/25/17 14:00	05/27/17 14:40	1
Thallium	ND		0.0010	0.00020	mg/L		05/25/17 14:00	05/27/17 14:40	1
Lithium	ND		0.0080	0.0017	mg/L		05/25/17 14:00	05/27/17 14:40	1

Lab Sample ID: LCS 240-280421/24-A
Matrix: Water
Analysis Batch: 280781

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280421

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.110		mg/L		110	80 - 120
Arsenic	1.00	1.14		mg/L		114	80 - 120
Barium	1.00	1.07		mg/L		107	80 - 120
Beryllium	1.00	0.957		mg/L		96	80 - 120
Calcium	10.0	9.38		mg/L		94	80 - 120
Cadmium	1.00	1.05		mg/L		105	80 - 120
Cobalt	1.00	1.10		mg/L		110	80 - 120
Chromium	1.00	1.06		mg/L		106	80 - 120
Molybdenum	0.100	0.104		mg/L		104	80 - 120
Lead	1.00	1.05		mg/L		105	80 - 120
Selenium	1.00	0.940		mg/L		94	80 - 120
Thallium	0.250	0.256		mg/L		102	80 - 120
Lithium	0.100	0.105		mg/L		105	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-97452-1 MS
Matrix: Water
Analysis Batch: 280781

Client Sample ID: MW-7
Prep Type: Total Recoverable
Prep Batch: 280421

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0013	J	0.100	0.110		mg/L		109	75 - 125
Arsenic	0.0014	J	1.00	1.17		mg/L		117	75 - 125
Barium	0.035		1.00	1.08		mg/L		105	75 - 125
Beryllium	ND		1.00	0.928		mg/L		93	75 - 125
Calcium	44		10.0	52.3	4	mg/L		88	75 - 125
Cadmium	0.00034	J	1.00	1.00		mg/L		100	75 - 125
Cobalt	0.0014		1.00	1.01		mg/L		101	75 - 125
Chromium	0.0047		1.00	1.02		mg/L		101	75 - 125
Molybdenum	0.0058	J	0.100	0.110		mg/L		104	75 - 125
Lead	0.0029		1.00	0.987		mg/L		98	75 - 125
Selenium	0.0052		1.00	0.962		mg/L		96	75 - 125
Thallium	ND		0.250	0.241		mg/L		97	75 - 125
Lithium	0.049		0.100	0.155		mg/L		106	75 - 125

Lab Sample ID: 280-97452-1 MSD
Matrix: Water
Analysis Batch: 280781

Client Sample ID: MW-7
Prep Type: Total Recoverable
Prep Batch: 280421

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0013	J	0.100	0.108		mg/L		107	75 - 125	2	20
Arsenic	0.0014	J	1.00	1.14	^	mg/L		114	75 - 125	2	20
Barium	0.035		1.00	1.05		mg/L		102	75 - 125	3	20
Beryllium	ND		1.00	0.912		mg/L		91	75 - 125	2	20
Calcium	44		10.0	50.2	4	mg/L		66	75 - 125	4	20
Cadmium	0.00034	J	1.00	0.981		mg/L		98	75 - 125	2	20
Cobalt	0.0014		1.00	0.999		mg/L		100	75 - 125	2	20
Chromium	0.0047		1.00	0.990		mg/L		99	75 - 125	3	20
Molybdenum	0.0058	J	0.100	0.108		mg/L		103	75 - 125	2	20
Lead	0.0029		1.00	0.960		mg/L		96	75 - 125	3	20
Selenium	0.0052		1.00	0.953		mg/L		95	75 - 125	1	20
Thallium	ND		0.250	0.233		mg/L		93	75 - 125	4	20
Lithium	0.049		0.100	0.152		mg/L		102	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-375932/1-A
Matrix: Water
Analysis Batch: 376524

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 375932

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/07/17 11:39	06/07/17 16:04	1

Lab Sample ID: LCS 280-375932/2-A
Matrix: Water
Analysis Batch: 376524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375932

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00505		mg/L		101	84 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 280-375932/3-A
Matrix: Water
Analysis Batch: 376524

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 375932

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00500	0.00493		mg/L		99	84 - 120	2	15

Method: 9040B - pH

Lab Sample ID: LCS 280-376804/4
Matrix: Water
Analysis Batch: 376804

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-377255/6
Matrix: Water
Analysis Batch: 377255

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			06/14/17 10:34	1
Fluoride	ND		0.50	0.060	mg/L			06/14/17 10:34	1
Sulfate	0.371	J	5.0	0.23	mg/L			06/14/17 10:34	1

Lab Sample ID: LCS 280-377255/4
Matrix: Water
Analysis Batch: 377255

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	100		mg/L		100	90 - 110
Fluoride	5.00	4.76		mg/L		95	90 - 110
Sulfate	100	99.4		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-377255/5
Matrix: Water
Analysis Batch: 377255

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	100		mg/L		100	90 - 110	0	10
Fluoride	5.00	4.76		mg/L		95	90 - 110	0	10
Sulfate	100	99.4		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-377255/3
Matrix: Water
Analysis Batch: 377255

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.03	J	mg/L		81	50 - 150
Fluoride	0.200	0.189	J	mg/L		95	50 - 150
Sulfate	2.50	2.16	J	mg/L		86	50 - 150

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-377418/6
Matrix: Water
Analysis Batch: 377418

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.391	J	5.0	0.23	mg/L			06/15/17 10:21	1

Lab Sample ID: LCS 280-377418/4
Matrix: Water
Analysis Batch: 377418

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	99.5		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-377418/5
Matrix: Water
Analysis Batch: 377418

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	100	99.5		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-377418/3
Matrix: Water
Analysis Batch: 377418

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.50	2.14	J	mg/L		85	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-375021/1
Matrix: Water
Analysis Batch: 375021

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/25/17 08:12	1

Lab Sample ID: LCS 280-375021/2
Matrix: Water
Analysis Batch: 375021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	487		mg/L		97	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-375106/2
Matrix: Water
Analysis Batch: 375106

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/25/17 15:55	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 280-375106/1
Matrix: Water
Analysis Batch: 375106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	102		mg/L		102	86 - 114

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-310932/1-A
Matrix: Water
Analysis Batch: 314401

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310932

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05770	U	0.0628	0.0630	1.00	0.0994	pCi/L	05/26/17 12:50	06/21/17 06:53	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*05/26/17 12:50*	*06/21/17 06:53*	*1*

Lab Sample ID: LCS 160-310932/2-A
Matrix: Water
Analysis Batch: 314401

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310932

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	10.95		1.15	1.00	0.0924	pCi/L	96	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*99.7*		*40 - 110*

Lab Sample ID: LCSD 160-310932/3-A
Matrix: Water
Analysis Batch: 314401

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310932

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	10.73		1.11	1.00	0.104	pCi/L	94	68 - 137	0.1	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*104*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-311004/1-A
Matrix: Water
Analysis Batch: 313013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311004

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1146	U	0.206	0.206	1.00	0.350	pCi/L	05/30/17 08:09	06/12/17 14:23	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-311004/1-A
Matrix: Water
Analysis Batch: 313013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311004

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	05/30/17 08:09	06/12/17 14:23	1
Y Carrier	79.6		40 - 110	05/30/17 08:09	06/12/17 14:23	1

Lab Sample ID: LCS 160-311004/2-A
Matrix: Water
Analysis Batch: 313013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311004

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.3	10.82		1.22	1.00	0.435	pCi/L	81	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.7		40 - 110
Y Carrier	83.4		40 - 110

Lab Sample ID: LCSD 160-311004/3-A
Matrix: Water
Analysis Batch: 313013

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 311004

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.3	9.629		1.10	1.00	0.348	pCi/L	72	56 - 140	0.52	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	80.0		40 - 110

Metals

Prep Batch: 280421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total Recoverable	Water	3005A	
280-97452-2	MW-1	Total Recoverable	Water	3005A	
280-97452-3	MW-3	Total Recoverable	Water	3005A	
280-97452-4	MW-4	Total Recoverable	Water	3005A	
280-97452-5	MW-6	Total Recoverable	Water	3005A	
280-97452-6	MW-8	Total Recoverable	Water	3005A	
MB 240-280421/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-280421/24-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-280421/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-97452-1 MS	MW-7	Total Recoverable	Water	3005A	
280-97452-1 MSD	MW-7	Total Recoverable	Water	3005A	

Analysis Batch: 280625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total Recoverable	Water	6010C	280421
280-97452-2	MW-1	Total Recoverable	Water	6010C	280421
280-97452-3	MW-3	Total Recoverable	Water	6010C	280421
280-97452-4	MW-4	Total Recoverable	Water	6010C	280421
280-97452-5	MW-6	Total Recoverable	Water	6010C	280421
280-97452-6	MW-8	Total Recoverable	Water	6010C	280421
MB 240-280421/1-A	Method Blank	Total Recoverable	Water	6010C	280421
LCS 240-280421/2-A	Lab Control Sample	Total Recoverable	Water	6010C	280421

Analysis Batch: 280781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total Recoverable	Water	6020A	280421
280-97452-2	MW-1	Total Recoverable	Water	6020A	280421
280-97452-3	MW-3	Total Recoverable	Water	6020A	280421
280-97452-4	MW-4	Total Recoverable	Water	6020A	280421
280-97452-5	MW-6	Total Recoverable	Water	6020A	280421
280-97452-6	MW-8	Total Recoverable	Water	6020A	280421
MB 240-280421/1-A	Method Blank	Total Recoverable	Water	6020A	280421
LCS 240-280421/24-A	Lab Control Sample	Total Recoverable	Water	6020A	280421
280-97452-1 MS	MW-7	Total Recoverable	Water	6020A	280421
280-97452-1 MSD	MW-7	Total Recoverable	Water	6020A	280421

Analysis Batch: 280974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-3	MW-3	Total Recoverable	Water	6020A	280421
280-97452-4	MW-4	Total Recoverable	Water	6020A	280421
280-97452-5	MW-6	Total Recoverable	Water	6020A	280421

Prep Batch: 375932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	7470A	
280-97452-2	MW-1	Total/NA	Water	7470A	
280-97452-3	MW-3	Total/NA	Water	7470A	
280-97452-4	MW-4	Total/NA	Water	7470A	
280-97452-5	MW-6	Total/NA	Water	7470A	
280-97452-6	MW-8	Total/NA	Water	7470A	
MB 280-375932/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 375932 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-375932/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 280-375932/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 376524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	7470A	375932
280-97452-2	MW-1	Total/NA	Water	7470A	375932
280-97452-3	MW-3	Total/NA	Water	7470A	375932
280-97452-4	MW-4	Total/NA	Water	7470A	375932
280-97452-5	MW-6	Total/NA	Water	7470A	375932
280-97452-6	MW-8	Total/NA	Water	7470A	375932
MB 280-375932/1-A	Method Blank	Total/NA	Water	7470A	375932
LCS 280-375932/2-A	Lab Control Sample	Total/NA	Water	7470A	375932
LCSD 280-375932/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	375932

General Chemistry

Analysis Batch: 375021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	SM 2540C	
280-97452-2	MW-1	Total/NA	Water	SM 2540C	
280-97452-3	MW-3	Total/NA	Water	SM 2540C	
280-97452-4	MW-4	Total/NA	Water	SM 2540C	
280-97452-5	MW-6	Total/NA	Water	SM 2540C	
280-97452-6	MW-8	Total/NA	Water	SM 2540C	
MB 280-375021/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-375021/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 375106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	SM 2540D	
280-97452-2	MW-1	Total/NA	Water	SM 2540D	
280-97452-3	MW-3	Total/NA	Water	SM 2540D	
280-97452-4	MW-4	Total/NA	Water	SM 2540D	
280-97452-5	MW-6	Total/NA	Water	SM 2540D	
280-97452-6	MW-8	Total/NA	Water	SM 2540D	
MB 280-375106/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-375106/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 376804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	9040B	
280-97452-2	MW-1	Total/NA	Water	9040B	
280-97452-3	MW-3	Total/NA	Water	9040B	
280-97452-4	MW-4	Total/NA	Water	9040B	
280-97452-5	MW-6	Total/NA	Water	9040B	
280-97452-6	MW-8	Total/NA	Water	9040B	
LCS 280-376804/4	Lab Control Sample	Total/NA	Water	9040B	

General Chemistry (Continued)

Analysis Batch: 377255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	9056A	
280-97452-2	MW-1	Total/NA	Water	9056A	
280-97452-2	MW-1	Total/NA	Water	9056A	
280-97452-3	MW-3	Total/NA	Water	9056A	
280-97452-4	MW-4	Total/NA	Water	9056A	
280-97452-4	MW-4	Total/NA	Water	9056A	
280-97452-5	MW-6	Total/NA	Water	9056A	
280-97452-5	MW-6	Total/NA	Water	9056A	
280-97452-6	MW-8	Total/NA	Water	9056A	
MB 280-377255/6	Method Blank	Total/NA	Water	9056A	
LCS 280-377255/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-377255/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-377255/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 377418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-3	MW-3	Total/NA	Water	9056A	
280-97452-4	MW-4	Total/NA	Water	9056A	
280-97452-6	MW-8	Total/NA	Water	9056A	
MB 280-377418/6	Method Blank	Total/NA	Water	9056A	
LCS 280-377418/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-377418/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-377418/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 310932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	PrecSep-21	
280-97452-2	MW-1	Total/NA	Water	PrecSep-21	
280-97452-3	MW-3	Total/NA	Water	PrecSep-21	
280-97452-4	MW-4	Total/NA	Water	PrecSep-21	
280-97452-5	MW-6	Total/NA	Water	PrecSep-21	
280-97452-6	MW-8	Total/NA	Water	PrecSep-21	
MB 160-310932/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-310932/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-310932/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 311004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-97452-1	MW-7	Total/NA	Water	PrecSep_0	
280-97452-2	MW-1	Total/NA	Water	PrecSep_0	
280-97452-3	MW-3	Total/NA	Water	PrecSep_0	
280-97452-4	MW-4	Total/NA	Water	PrecSep_0	
280-97452-5	MW-6	Total/NA	Water	PrecSep_0	
280-97452-6	MW-8	Total/NA	Water	PrecSep_0	
MB 160-311004/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-311004/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-311004/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-7

Date Collected: 05/22/17 14:10
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280625	05/26/17 14:33	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280781	05/27/17 14:49	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375932	06/07/17 11:39	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376524	06/07/17 16:13	CDH	TAL DEN
Total/NA	Analysis	9040B		1			376804	06/09/17 16:05	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377255	06/15/17 01:48	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	375021	05/25/17 08:12	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	375106	05/25/17 15:55	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.26 mL	1.0 g	310932	05/26/17 12:50	MBC	TAL SL
Total/NA	Analysis	9315		1			314392	06/21/17 08:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.26 mL	1.0 g	311004	05/30/17 08:09	LDE	TAL SL
Total/NA	Analysis	9320		1			312922	06/12/17 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314773	06/22/17 12:52	RTM	TAL SL

Client Sample ID: MW-1

Date Collected: 05/23/17 08:50
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280625	05/26/17 14:46	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280781	05/27/17 15:18	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375932	06/07/17 11:39	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376524	06/07/17 16:15	CDH	TAL DEN
Total/NA	Analysis	9040B		1			376804	06/09/17 16:10	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377255	06/15/17 02:23	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	377255	06/15/17 02:40	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	375021	05/25/17 08:12	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	375106	05/25/17 15:55	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.97 mL	1.0 g	310932	05/26/17 12:50	MBC	TAL SL
Total/NA	Analysis	9315		1			314392	06/21/17 08:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.97 mL	1.0 g	311004	05/30/17 08:09	LDE	TAL SL
Total/NA	Analysis	9320		1			312922	06/12/17 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314773	06/22/17 12:52	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-3

Date Collected: 05/22/17 10:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280625	05/26/17 14:50	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280781	05/27/17 15:22	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		2			280974	05/31/17 00:17	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375932	06/07/17 11:39	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376524	06/07/17 16:22	CDH	TAL DEN
Total/NA	Analysis	9040B		1			376804	06/09/17 16:15	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377255	06/15/17 03:33	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	377418	06/15/17 19:48	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	375021	05/25/17 08:12	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	375106	05/25/17 15:55	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.14 mL	1.0 g	310932	05/26/17 12:50	MBC	TAL SL
Total/NA	Analysis	9315		1			314392	06/21/17 08:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.14 mL	1.0 g	311004	05/30/17 08:09	LDE	TAL SL
Total/NA	Analysis	9320		1			312922	06/12/17 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314773	06/22/17 12:52	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280625	05/26/17 14:55	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280781	05/27/17 15:26	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280974	05/31/17 00:21	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375932	06/07/17 11:39	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376524	06/07/17 16:24	CDH	TAL DEN
Total/NA	Analysis	9040B		1			376804	06/09/17 16:20	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377255	06/15/17 04:08	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	377255	06/15/17 04:25	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	377418	06/15/17 20:05	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	375021	05/25/17 08:12	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	375106	05/25/17 15:55	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.12 mL	1.0 g	310932	05/26/17 12:50	MBC	TAL SL
Total/NA	Analysis	9315		1			314390	06/21/17 08:25	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.12 mL	1.0 g	311004	05/30/17 08:09	LDE	TAL SL
Total/NA	Analysis	9320		1			312922	06/12/17 14:25	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-4

Date Collected: 05/22/17 15:00
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			314773	06/22/17 12:52	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 05/22/17 12:45
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280625	05/26/17 15:00	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280781	05/27/17 15:30	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280974	05/31/17 00:25	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375932	06/07/17 11:39	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376524	06/07/17 16:26	CDH	TAL DEN
Total/NA	Analysis	9040B		1			376804	06/09/17 16:25	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377255	06/15/17 04:43	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	377255	06/15/17 05:00	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	375021	05/25/17 08:12	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	375106	05/25/17 15:55	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.63 mL	1.0 g	310932	05/26/17 12:50	MBC	TAL SL
Total/NA	Analysis	9315		1			314390	06/21/17 08:25	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.63 mL	1.0 g	311004	05/30/17 08:09	LDE	TAL SL
Total/NA	Analysis	9320		1			312922	06/12/17 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314773	06/22/17 12:52	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			280625	05/26/17 15:04	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	280421	05/25/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			280781	05/27/17 15:34	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	375932	06/07/17 11:39	CDH	TAL DEN
Total/NA	Analysis	7470A		1			376524	06/07/17 16:29	CDH	TAL DEN
Total/NA	Analysis	9040B		1			376804	06/09/17 16:41	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	377255	06/15/17 05:18	AFB	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	377418	06/15/17 20:23	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	375021	05/25/17 08:12	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	375106	05/25/17 15:55	SVC	TAL DEN

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Client Sample ID: MW-8

Date Collected: 05/22/17 13:30
Date Received: 05/23/17 10:25

Lab Sample ID: 280-97452-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.49 mL	1.0 g	310932	05/26/17 12:50	MBC	TAL SL
Total/NA	Analysis	9315		1			314390	06/21/17 08:25	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.49 mL	1.0 g	311004	05/30/17 08:09	LDE	TAL SL
Total/NA	Analysis	9320		1			312922	06/12/17 14:24	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314773	06/22/17 12:52	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-18
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17 *
Illinois	NELAP	5	200004	07-31-17 *
Kansas	NELAP	7	E-10336	01-31-18
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17
Minnesota	NELAP	5	039-999-348	12-31-17
Minnesota (Petrofund)	State Program	1	3506	07-31-17 *
Nevada	State Program	9	OH-000482008A	07-31-17 *
New Jersey	NELAP	2	OH001	06-30-17 *
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-17 *
Texas	NELAP	6	T104704517-15-5	08-31-17 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-18
West Virginia DEP	State Program	3	210	12-31-17
Wisconsin	State Program	5	999518190	08-31-17 *

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17 *
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: T. Snyder	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 720-838-6065	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page ___ of ___
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: ~~720-633-3380(Tel)~~ 303-351-2139	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

280-97452 Chain of Custody

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
Unit 6 MW-1				Water		N							
MW-7	5/22/17	1410	G	Water		N	X	X	X	X	X		
MW-1	5/23/17	0850	G	Water		N	X	X	X	X	X		
MW-3	5/22/17	1030	G	Water		N	X	X	X	X	X		
MW-4	5/22/17	1500	G	Water		N	X	X	X	X	X		
MW-6	5/22/17	1245	G	Water		N	X	X	X	X	X		
MW-8	5/22/17	1330	G	Water		N	X	X	X	X	X		
MW-9				Water		N							
MW-10				Water		N							
MW-11				Water		N							
MW-12				Water		N							

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Travis Snyder	5/23/17 1025			5/23/17 1025	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: i.6, 3.6 IR #70.0 Transfer RP 5-23-17

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-97452 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie	COC No: 280-399724.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA	Page: Page 1 of 1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/21/2017		Job #: 280-97452-1
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Xcel Energy CCR - Valmont Station	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-7 (280-97452-1)	5/22/17	14:10 Mountain		Water			X	X	X	2	
MW-1 (280-97452-2)	5/23/17	08:50 Mountain		Water			X	X	X	2	
MW-3 (280-97452-3)	5/22/17	10:30 Mountain		Water			X	X	X	2	
MW-4 (280-97452-4)	5/22/17	15:00 Mountain		Water			X	X	X	2	
MW-6 (280-97452-5)	5/22/17	12:45 Mountain		Water			X	X	X	2	
MW-8 (280-97452-6)	5/22/17	13:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Fabrinda [signature]	Date/Time: 5/23/17 1500	Company TAD	Received by: [signature]	Date/Time: 5-24-17 0750	Company TASTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

18.9/C18.9

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-399723.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-97452-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 6/16/2017			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

559

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-7 (280-97452-1)	5/22/17	14:10 Mountain		Water			X	X	1	, Use Collision Cell
MW-1 (280-97452-2)	5/23/17	08:50 Mountain		Water			X	X	1	Use Collision Cell
MW-3 (280-97452-3)	5/22/17	10:30 Mountain		Water			X	X	1	, Use Collision Cell
MW-4 (280-97452-4)	5/22/17	15:00 Mountain		Water			X	X	1	Use Collision Cell
MW-6 (280-97452-5)	5/22/17	12:45 Mountain		Water			X	X	1	, Use Collision Cell
MW-8 (280-97452-6)	5/22/17	13:30 Mountain		Water			X	X	1	Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/23/17 1530	TAD	[signature]	5-24-17 1225	TA1
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

6/22/2017

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client TA Denver Site Name _____ Cooler unpacked by:

Cooler Received on 5-24-17 Opened on 5-24-17

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF **-0.4** °C) Observed Cooler Temp. ____ °C Corrected Cooler Temp. ____ °C
   IR GUN #36 (CF **+0**°C) Observed Cooler Temp. 18.9 °C Corrected Cooler Temp. 18.9 °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity ____	Yes	No
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 11-15 have been checked at the originating laboratory.		
11. Were sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# **HC697954**
12. Were VOAs on the COC?	Yes	No
13. Were air bubbles >6 mm in any VOA vials? ⬅ Larger than this.	Yes	No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
15. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

17. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-97452-1

Login Number: 97452
List Number: 1
Creator: Pottruff, Reed W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	N/A	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-97452-1

Login Number: 97452
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 05/24/17 04:47 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0,2.0
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?	N/A	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-97452-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-97452-1	MW-7	93.5
280-97452-2	MW-1	98.8
280-97452-3	MW-3	99.1
280-97452-4	MW-4	101
280-97452-5	MW-6	91.2
280-97452-6	MW-8	100
LCS 160-310932/2-A	Lab Control Sample	99.7
LCSD 160-310932/3-A	Lab Control Sample Dup	104
MB 160-310932/1-A	Method Blank	101

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-97452-1	MW-7	93.5	82.2
280-97452-2	MW-1	98.8	82.6
280-97452-3	MW-3	99.1	84.5
280-97452-4	MW-4	101	81.1
280-97452-5	MW-6	91.2	78.9
280-97452-6	MW-8	100	76.6
LCS 160-311004/2-A	Lab Control Sample	99.7	83.4
LCSD 160-311004/3-A	Lab Control Sample Dup	104	80.0
MB 160-311004/1-A	Method Blank	101	79.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-99214-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Stephanie Rothmeyer

Authorized for release by:
8/10/2017 5:32:39 PM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

LINKS

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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.

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Qualifiers

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
H	Sample was prepped or analyzed beyond the specified holding time

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)

Job ID: 280-99214-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-99214-1

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.

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.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

RECEIPT

The samples were received on 7/13/2017 at 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 0.7º C, 2.1º C, 3.0º C, 3.0º C, 3.1º C and 4.2º C.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 280-99214-1. The container labels list Sample ID Unit 6 MW-1, while the COC lists 280-99214-1. The sample was logged per the COC. The client was notified on 7/14/17.

Per client instruction on 7/14/17, the sample ID for Sample -13 was changed to MW-1PBEB.

TOTAL RECOVERABLE METALS

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 07/18/2017 and analyzed on 07/20/2017.

Boron failed the recovery criteria low for the MS and MSD of sample 280-99205-1 in batch 240-288117. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 07/18/2017 and analyzed on 07/20/2017 and 07/21/2017.

Calcium failed the recovery criteria low for the MS of sample 280-99205-1 in batch 240-287962. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Job ID: 280-99214-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

The continuing calibration verification (CCV) associated with batch 240-287962 recovered above the upper control limit for Arsenic, Antimony, and Barium. The samples associated with this CCV were below the requested reporting limit for the affected analytes; therefore, the data have been reported.

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

TOTAL MERCURY

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 07/27/2017.

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

TOTAL DISSOLVED SOLIDS

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 07/17/2017 and 07/19/2017.

Reanalysis of the following samples was performed outside of the analytical holding time due to the original results being over residue: MW-6 (280-99214-6), MW-8 (280-99214-7). Reanalysis was performed with the new results within residue limits.

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

TOTAL SUSPENDED SOLIDS

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 07/17/2017.

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

CORROSIVITY (PH)

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 07/15/2017 and 07/17/2017.

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

ANIONS (28 DAYS)

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 07/18/2017 and 07/19/2017.

Samples MW-1 (280-99214-3)[5X], MW-3 (280-99214-4)[20X], MW-4 (280-99214-5)[50X], MW-6 (280-99214-6)[10X], MW-8 (280-99214-7) [50X], MW-9 (280-99214-8)[5X], MW-10 (280-99214-9)[10X] and MW-10D (280-99214-12)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Job ID: 280-99214-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 07/19/2017 and analyzed on 08/10/2017.

Insufficient sample volume was available to perform a sample duplicate (DU) associated with batch 160-318122.

The following sample was reduced due to heavy amounts of sediment making sample murky: MW-6 (280-99214-6).

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

RADIUM-228

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 07/19/2017 and analyzed on 07/27/2017.

Insufficient sample volume was available to perform a sample duplicate (DU) associated with batch 160-318133.

The following sample was reduced due to heavy amounts of sediment making sample murky: MW-6 (280-99214-6).

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-1P (280-99214-1), MW-7 (280-99214-2), MW-1 (280-99214-3), MW-3 (280-99214-4), MW-4 (280-99214-5), MW-6 (280-99214-6), MW-8 (280-99214-7), MW-9 (280-99214-8), MW-10 (280-99214-9), MW-11 (280-99214-10), MW-12 (280-99214-11), MW-10D (280-99214-12) and MW-1PBEB (280-99214-13) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 08/10/2017.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-1P — Lab Sample ID: 280-99214-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.2		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0046	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.16		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	94		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00047	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.014		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0020	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.0084		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	82		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.91		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	63		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	560		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 280-99214-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.30		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Antimony	0.00057	J ^	0.0020	0.00057	mg/L	1		6020A	Total Recoverable
Arsenic	0.0013	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.029		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	51		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cadmium	0.00022	J	0.0010	0.00021	mg/L	1		6020A	Total Recoverable
Cobalt	0.00045	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0025		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0037	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.00047	J	0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.0049	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.041		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	52		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.46	J	0.50	0.060	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-99214-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	120		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	680		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 280-99214-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.34		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0015	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.10		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	88		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cadmium	0.00046	J	0.0010	0.00021	mg/L	1		6020A	Total Recoverable
Cobalt	0.0019		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0071		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0075	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.0019		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.0016	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.031		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	67		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.33	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	290		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	880		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	82		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-99214-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.6		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0013	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.015		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	500		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00051	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0011	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0022	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-3 (Continued) — Lab Sample ID: 280-99214-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.085		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	45		3.0	0.25	mg/L	1		9056A	Total/NA
Sulfate	2400		100	4.6	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3800		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	44		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-99214-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.2		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.023		0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.033		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0024		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0048		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Molybdenum	0.015		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.0019		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.24		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.23		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	480		150	13	mg/L	50		9056A	Total/NA
Fluoride	3.1		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	5600		250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	9500		100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	97		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 280-99214-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.47		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0036	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.068		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	340		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0028		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.011		0.0020	0.00098	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued) — Lab Sample ID: 280-99214-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0026	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.0041		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.017		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.069		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	600		30	2.5	mg/L	10		9056A	Total/NA
Fluoride	0.079	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	780		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2300	H	20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	22		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-99214-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.90		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0021	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.025		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	470		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00089	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Chromium	0.0049		0.0020	0.00098	mg/L	1		6020A	Total Recoverable
Lead	0.0013		0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Selenium	0.0070		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.13		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	150		3.0	0.25	mg/L	1		9056A	Total/NA
Sulfate	2600		250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	4100	H	40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	9.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-99214-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	11		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0026	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.047		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-9 (Continued) — Lab Sample ID: 280-99214-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.011		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.16		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0018	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.027		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	60		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	2.8		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	570		25	1.2	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 280-99214-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	16		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0015	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.048		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0091		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.23		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.00095	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.038		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	63		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.5		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	660		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1300		10	4.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 280-99214-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.6		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0076		0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.077		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.013		0.0010	0.00019	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-11 (Continued) — Lab Sample ID: 280-99214-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.018		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Lead	0.00056	J	0.0010	0.00045	mg/L	1		6020A	Total Recoverable
Lithium	0.010		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	56		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	1.7		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	67		5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	750		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	40		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 280-99214-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.5		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0046	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.063		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	150		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0087		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0031	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0010	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.0019	J	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	38		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	0.46	J	0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	3.0	J	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	920		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	24		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-10D — Lab Sample ID: 280-99214-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	16		0.20	0.0081	mg/L	1		6010C	Total Recoverable
Arsenic	0.0016	J ^	0.0050	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.047		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	120		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0093		0.0010	0.00019	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-10D (Continued)

Lab Sample ID: 280-99214-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.23		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0012	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
Lithium	0.038		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	63		3.0	0.25	mg/L	1		9056A	Total/NA
Fluoride	3.5		0.50	0.060	mg/L	1		9056A	Total/NA
Sulfate	650		50	2.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1400		10	4.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-1PBEB

Lab Sample ID: 280-99214-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.036	J	0.20	0.0081	mg/L	1		6010C	Total Recoverable
pH adj. to 25 deg C	4.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	24.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Sulfate	1.3	J	5.0	0.23	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-99214-1	MW-1P	Water	07/13/17 13:05	07/13/17 17:00
280-99214-2	MW-7	Water	07/10/17 10:55	07/13/17 17:00
280-99214-3	MW-1	Water	07/11/17 16:08	07/13/17 17:00
280-99214-4	MW-3	Water	07/13/17 10:57	07/13/17 17:00
280-99214-5	MW-4	Water	07/12/17 11:03	07/13/17 17:00
280-99214-6	MW-6	Water	07/10/17 14:20	07/13/17 17:00
280-99214-7	MW-8	Water	07/10/17 12:55	07/13/17 17:00
280-99214-8	MW-9	Water	07/12/17 13:33	07/13/17 17:00
280-99214-9	MW-10	Water	07/11/17 15:00	07/13/17 17:00
280-99214-10	MW-11	Water	07/12/17 17:04	07/13/17 17:00
280-99214-11	MW-12	Water	07/12/17 15:50	07/13/17 17:00
280-99214-12	MW-10D	Water	07/11/17 15:00	07/13/17 17:00
280-99214-13	MW-1PBEB	Water	07/13/17 13:35	07/13/17 17:00

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.2		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:25	1

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.30		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:30	1

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:34	1

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:38	1

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.2		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:43	1

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.47		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:47	1

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.90		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 15:51	1

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	11		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 16:04	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	16		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 16:09	1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.6**		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 16:22	1

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.5**		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 16:26	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**16**		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 16:30	1

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.036**	**J**	0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 16:39	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 05:55	1
Arsenic	**0.0046**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 05:55	1
Barium	**0.16**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:04	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 05:55	1
Calcium	**94**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 05:55	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 05:55	1
Cobalt	**0.00047**	**J**	0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 05:55	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 05:55	1
Molybdenum	**0.014**		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 05:55	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 05:55	1
Selenium	**0.0020**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 05:55	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 05:55	1
Lithium	**0.0084**		0.0080	0.0017	mg/L		07/18/17 14:00	07/21/17 00:04	1

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00057**	**J ^**	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 05:59	1
Arsenic	**0.0013**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 05:59	1
Barium	**0.029**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:17	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 05:59	1
Calcium	**51**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 05:59	1
Cadmium	**0.00022**	**J**	0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 05:59	1
Cobalt	**0.00045**	**J**	0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 05:59	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**0.0025**		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 05:59	1
Molybdenum	**0.0037**	**J**	0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 05:59	1
Lead	**0.00047**	**J**	0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 05:59	1
Selenium	**0.0049**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 05:59	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 05:59	1
Lithium	**0.041**		0.0080	0.0017	mg/L		07/18/17 14:00	07/21/17 00:17	1

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:04	1
Arsenic	**0.0015**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:04	1
Barium	**0.10**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:21	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:04	1
Calcium	**88**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:04	1
Cadmium	**0.00046**	**J**	0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:04	1
Cobalt	**0.0019**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:04	1
Chromium	**0.0071**		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:04	1
Molybdenum	**0.0075**	**J**	0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:04	1
Lead	**0.0019**		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:04	1
Selenium	**0.0016**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:04	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:04	1
Lithium	**0.031**		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:04	1

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:08	1
Arsenic	**0.0013**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:08	1
Barium	**0.015**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:25	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:08	1
Calcium	**500**		1.0	0.58	mg/L		07/18/17 14:00	07/21/17 00:25	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:08	1
Cobalt	**0.00051**	**J**	0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:08	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:08	1
Molybdenum	**0.0011**	**J**	0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:08	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:08	1
Selenium	**0.0022**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:08	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:08	1
Lithium	**0.085**		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:08	1

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:12	1
Arsenic	**0.023**		0.0050	0.00075	mg/L		07/18/17 14:00	07/21/17 00:29	1
Barium	**0.033**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:29	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:12	1
Calcium	**390**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:12	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:12	1
Cobalt	**0.0024**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:12	1
Chromium	**0.0048**		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:12	1
Molybdenum	**0.015**		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:12	1
Lead	**0.0019**		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:12	1
Selenium	**0.24**		0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:12	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:12	1
Lithium	**0.23**		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:12	1

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:16	1
Arsenic	**0.0036**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:16	1
Barium	**0.068**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:34	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:16	1
Calcium	**340**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:16	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:16	1
Cobalt	**0.0028**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:16	1
Chromium	**0.011**		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:16	1
Molybdenum	**0.0026**	**J**	0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:16	1
Lead	**0.0041**		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:16	1
Selenium	**0.017**		0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:16	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:16	1
Lithium	**0.069**		0.0080	0.0017	mg/L		07/18/17 14:00	07/21/17 00:34	1

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:21	1
Arsenic	**0.0021**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:21	1
Barium	**0.025**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:38	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:21	1
Calcium	**470**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:21	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:21	1
Cobalt	**0.00089**	**J**	0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:21	1
Chromium	**0.0049**		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:21	1
Molybdenum	ND		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:21	1
Lead	**0.0013**		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:21	1
Selenium	**0.0070**		0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:21	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:21	1
Lithium	**0.13**		0.0080	0.0017	mg/L		07/18/17 14:00	07/21/17 00:38	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:25	1
Arsenic	**0.0026**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:25	1
Barium	**0.047**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:42	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:25	1
Calcium	**120**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:25	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:25	1
Cobalt	**0.011**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:25	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:25	1
Molybdenum	**0.16**		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:25	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:25	1
Selenium	**0.0018**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:25	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:25	1
Lithium	**0.027**		0.0080	0.0017	mg/L		07/18/17 14:00	07/21/17 00:42	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:38	1
Arsenic	**0.0015**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:38	1
Barium	**0.048**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:47	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:38	1
Calcium	**120**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:38	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:38	1
Cobalt	**0.0091**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:38	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:38	1
Molybdenum	**0.23**		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:38	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:38	1
Selenium	**0.00095**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:38	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:38	1
Lithium	**0.038**		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:38	1

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:42	1
Arsenic	**0.0076**		0.0050	0.00075	mg/L		07/18/17 14:00	07/21/17 00:51	1
Barium	**0.077**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:51	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:42	1
Calcium	**120**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:42	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:42	1
Cobalt	**0.013**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:42	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:42	1
Molybdenum	**0.018**		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:42	1
Lead	**0.00056**	**J**	0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:42	1
Selenium	ND		0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:42	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:42	1
Lithium	**0.010**		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:46	1
Arsenic	**0.0046**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:46	1
Barium	**0.063**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 00:55	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:46	1
Calcium	**150**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:46	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:46	1
Cobalt	**0.0087**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:46	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:46	1
Molybdenum	**0.0031**	**J**	0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:46	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:46	1
Selenium	**0.0010**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:46	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:46	1
Lithium	**0.0019**	**J**	0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:46	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:51	1
Arsenic	**0.0016**	**J ^**	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:51	1
Barium	**0.047**		0.0050	0.0022	mg/L		07/18/17 14:00	07/21/17 01:08	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:51	1
Calcium	**120**		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:51	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:51	1
Cobalt	**0.0093**		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:51	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:51	1
Molybdenum	**0.23**		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:51	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:51	1
Selenium	**0.0012**	**J**	0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:51	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:51	1
Lithium	**0.038**		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:51	1

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	^	0.0020	0.00057	mg/L		07/18/17 14:00	07/20/17 06:55	1
Arsenic	ND	^	0.0050	0.00075	mg/L		07/18/17 14:00	07/20/17 06:55	1
Barium	ND	^	0.0050	0.0022	mg/L		07/18/17 14:00	07/20/17 06:55	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/20/17 06:55	1
Calcium	ND		1.0	0.58	mg/L		07/18/17 14:00	07/20/17 06:55	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/20/17 06:55	1
Cobalt	ND		0.0010	0.00019	mg/L		07/18/17 14:00	07/20/17 06:55	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/20/17 06:55	1
Molybdenum	ND		0.010	0.0011	mg/L		07/18/17 14:00	07/20/17 06:55	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/20/17 06:55	1
Selenium	ND		0.0050	0.00089	mg/L		07/18/17 14:00	07/20/17 06:55	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/20/17 06:55	1
Lithium	ND		0.0080	0.0017	mg/L		07/18/17 14:00	07/20/17 06:55	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:42	1

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:49	1

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:51	1

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:53	1

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:55	1

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:57	1

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:04	1

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:06	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:09	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:11	1

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:13	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:15	1

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 17:17	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			07/15/17 08:12	1
Temperature	20.5	HF	1.0	1.0	Degrees C			07/15/17 08:12	1
Chloride	82		3.0	0.25	mg/L			07/18/17 10:31	1
Fluoride	0.91		0.50	0.060	mg/L			07/18/17 10:31	1
Sulfate	63		5.0	0.23	mg/L			07/18/17 10:31	1
Total Dissolved Solids (TDS)	560		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	6.4		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU			07/15/17 11:47	1
Temperature	22.4	HF	1.0	1.0	Degrees C			07/15/17 11:47	1
Chloride	52		3.0	0.25	mg/L			07/18/17 11:42	1
Fluoride	0.46	J	0.50	0.060	mg/L			07/18/17 11:42	1
Sulfate	120		5.0	0.23	mg/L			07/18/17 11:42	1
Total Dissolved Solids (TDS)	680		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	5.6		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			07/15/17 10:48	1

General Chemistry (Continued)

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	22.1	HF	1.0	1.0	Degrees C			07/15/17 10:48	1
Chloride	67		3.0	0.25	mg/L			07/18/17 12:00	1
Fluoride	0.33	J	0.50	0.060	mg/L			07/18/17 12:00	1
Sulfate	290		25	1.2	mg/L			07/18/17 20:34	5
Total Dissolved Solids (TDS)	880		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	82		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			07/15/17 08:07	1
Temperature	20.4	HF	1.0	1.0	Degrees C			07/15/17 08:07	1
Chloride	45		3.0	0.25	mg/L			07/18/17 12:18	1
Fluoride	ND		0.50	0.060	mg/L			07/18/17 12:18	1
Sulfate	2400		100	4.6	mg/L			07/19/17 15:59	20
Total Dissolved Solids (TDS)	3800		40	19	mg/L			07/19/17 14:45	1
Total Suspended Solids	44		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			07/15/17 10:43	1
Temperature	22.0	HF	1.0	1.0	Degrees C			07/15/17 10:43	1
Chloride	480		150	13	mg/L			07/18/17 21:09	50
Fluoride	3.1		0.50	0.060	mg/L			07/18/17 12:36	1
Sulfate	5600		250	12	mg/L			07/18/17 21:09	50
Total Dissolved Solids (TDS)	9500		100	47	mg/L			07/19/17 14:45	1
Total Suspended Solids	97		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			07/15/17 11:18	1
Temperature	22.2	HF	1.0	1.0	Degrees C			07/15/17 11:18	1
Chloride	600		30	2.5	mg/L			07/18/17 13:11	10
Fluoride	0.079	J	0.50	0.060	mg/L			07/18/17 12:54	1
Sulfate	780		50	2.3	mg/L			07/18/17 13:11	10
Total Dissolved Solids (TDS)	2300	H	20	9.4	mg/L			07/19/17 14:45	1
Total Suspended Solids	22		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			07/15/17 11:37	1
Temperature	22.2	HF	1.0	1.0	Degrees C			07/15/17 11:37	1
Chloride	150		3.0	0.25	mg/L			07/18/17 18:06	1

General Chemistry (Continued)

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.060	mg/L			07/18/17 18:06	1
Sulfate	**2600**		250	12	mg/L			07/18/17 22:03	50
Total Dissolved Solids (TDS)	**4100**	**H**	40	19	mg/L			07/19/17 14:45	1
Total Suspended Solids	**9.6**		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**8.0**	**HF**	0.1	0.1	SU			07/15/17 10:53	1
Temperature	**22.0**	**HF**	1.0	1.0	Degrees C			07/15/17 10:53	1
Chloride	**60**		3.0	0.25	mg/L			07/18/17 18:24	1
Fluoride	**2.8**		0.50	0.060	mg/L			07/18/17 18:24	1
Sulfate	**570**		25	1.2	mg/L			07/18/17 22:20	5
Total Dissolved Solids (TDS)	**1300**		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	**2.8**	**J**	4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**8.0**	**HF**	0.1	0.1	SU			07/15/17 11:13	1
Temperature	**22.0**	**HF**	1.0	1.0	Degrees C			07/15/17 11:13	1
Chloride	**63**		3.0	0.25	mg/L			07/18/17 19:05	1
Fluoride	**3.5**		0.50	0.060	mg/L			07/18/17 19:05	1
Sulfate	**660**		50	2.3	mg/L			07/18/17 22:38	10
Total Dissolved Solids (TDS)	**1300**		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	ND		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.7**	**HF**	0.1	0.1	SU			07/15/17 11:08	1
Temperature	**21.9**	**HF**	1.0	1.0	Degrees C			07/15/17 11:08	1
Chloride	**56**		3.0	0.25	mg/L			07/18/17 19:22	1
Fluoride	**1.7**		0.50	0.060	mg/L			07/18/17 19:22	1
Sulfate	**67**		5.0	0.23	mg/L			07/18/17 19:22	1
Total Dissolved Solids (TDS)	**750**		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	**40**		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.5**	**HF**	0.1	0.1	SU			07/15/17 11:03	1
Temperature	**21.9**	**HF**	1.0	1.0	Degrees C			07/15/17 11:03	1
Chloride	**38**		3.0	0.25	mg/L			07/18/17 19:40	1
Fluoride	**0.46**	**J**	0.50	0.060	mg/L			07/18/17 19:40	1
Sulfate	**3.0**	**J**	5.0	0.23	mg/L			07/18/17 19:40	1

General Chemistry (Continued)

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	**920**		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	**24**		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**8.0**	**HF**	0.1	0.1	SU			07/15/17 10:58	1
Temperature	**21.9**	**HF**	1.0	1.0	Degrees C			07/15/17 10:58	1
Chloride	**63**		3.0	0.25	mg/L			07/18/17 19:58	1
Fluoride	**3.5**		0.50	0.060	mg/L			07/18/17 19:58	1
Sulfate	**650**		50	2.3	mg/L			07/18/17 23:50	10
Total Dissolved Solids (TDS)	**1400**		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	ND		4.0	1.1	mg/L			07/17/17 17:24	1

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**4.0**	**HF**	0.1	0.1	SU			07/17/17 16:25	1
Temperature	**24.5**	**HF**	1.0	1.0	Degrees C			07/17/17 16:25	1
Chloride	ND		3.0	0.25	mg/L			07/18/17 20:16	1
Fluoride	ND		0.50	0.060	mg/L			07/18/17 20:16	1
Sulfate	**1.3**	**J**	5.0	0.23	mg/L			07/18/17 20:16	1
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/17/17 15:53	1
Total Suspended Solids	ND		4.0	1.1	mg/L			07/17/17 17:24	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0521	U	0.0532	0.0534	1.00	0.0820	pCi/L	07/19/17 08:58	08/10/17 09:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*07/19/17 08:58*	*08/10/17 09:00*	*1*

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.257**		0.0882	0.0912	1.00	0.0748	pCi/L	07/19/17 08:58	08/10/17 09:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*07/19/17 08:58*	*08/10/17 09:00*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.283		0.0961	0.0994	1.00	0.0817	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.398		0.107	0.113	1.00	0.0803	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.338		0.0939	0.0988	1.00	0.0552	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.845		0.192	0.207	1.00	0.109	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.400		0.105	0.111	1.00	0.0704	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.163		0.0736	0.0751	1.00	0.0781	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.171		0.0733	0.0750	1.00	0.0720	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.206		0.0792	0.0813	1.00	0.0733	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0953		0.0613	0.0619	1.00	0.0769	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.124		0.0659	0.0669	1.00	0.0753	pCi/L	07/19/17 08:58	08/10/17 09:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 08:58	08/10/17 09:01	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0197	U	0.0495	0.0495	1.00	0.0913	pCi/L	07/19/17 08:58	08/10/17 09:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*07/19/17 08:58*	*08/10/17 09:02*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.210	U	0.206	0.207	1.00	0.333	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*89.7*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.457**		0.226	0.230	1.00	0.330	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*90.0*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.675**		0.261	0.268	1.00	0.354	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*86.2*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.563		0.214	0.220	1.00	0.292	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*102*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.333		0.204	0.206	1.00	0.313	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*107*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.84		0.378	0.414	1.00	0.415	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*99.4*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.967		0.239	0.255	1.00	0.275	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*
Y Carrier	*101*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:38*	*1*

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.417		0.207	0.211	1.00	0.297	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 09:53	07/27/17 14:38	1
Y Carrier	87.8		40 - 110	07/19/17 09:53	07/27/17 14:38	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0649	U	0.175	0.175	1.00	0.303	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 09:53	07/27/17 14:38	1
Y Carrier	94.5		40 - 110	07/19/17 09:53	07/27/17 14:38	1

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.345	U	0.241	0.243	1.00	0.373	pCi/L	07/19/17 09:53	07/27/17 14:38	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 09:53	07/27/17 14:38	1
Y Carrier	81.7		40 - 110	07/19/17 09:53	07/27/17 14:38	1

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.242	U	0.183	0.184	1.00	0.285	pCi/L	07/19/17 09:53	07/27/17 14:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110	07/19/17 09:53	07/27/17 14:39	1
Y Carrier	102		40 - 110	07/19/17 09:53	07/27/17 14:39	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.407**		0.200	0.203	1.00	0.285	pCi/L	07/19/17 09:53	07/27/17 14:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	07/19/17 09:53	07/27/17 14:39	1
Y Carrier	96.8		40 - 110	07/19/17 09:53	07/27/17 14:39	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0107	U	0.179	0.179	1.00	0.322	pCi/L	07/19/17 09:53	07/27/17 14:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:39*	*1*
Y Carrier	*96.8*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P
Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.262	U	0.213	0.214	5.00	0.333	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-7
Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.713**		0.243	0.248	5.00	0.330	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-1
Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.957**		0.278	0.286	5.00	0.354	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-3
Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.961**		0.239	0.248	5.00	0.292	pCi/L		08/10/17 16:27	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-4
Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.672		0.225	0.229	5.00	0.313	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-6
Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.69		0.424	0.463	5.00	0.415	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-8
Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.37		0.260	0.278	5.00	0.275	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-9
Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.580		0.220	0.224	5.00	0.297	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-10
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.236	U	0.189	0.190	5.00	0.303	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-11
Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.550		0.253	0.256	5.00	0.373	pCi/L		08/10/17 16:27	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-12
Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.337**		0.193	0.194	5.00	0.285	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-10D
Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.531**		0.210	0.214	5.00	0.285	pCi/L		08/10/17 16:27	1

Client Sample ID: MW-1PBEB
Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.00902	U	0.185	0.185	5.00	0.322	pCi/L		08/10/17 16:27	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-287671/1-A
Matrix: Water
Analysis Batch: 288117

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 287671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.0081	mg/L		07/18/17 14:00	07/20/17 14:16	1

Lab Sample ID: LCS 240-287671/2-A
Matrix: Water
Analysis Batch: 288117

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 287671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.994		mg/L		99	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-287671/1-A
Matrix: Water
Analysis Batch: 287962

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 287671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		07/18/17 14:00	07/19/17 18:54	1
Arsenic	ND		0.0050	0.00075	mg/L		07/18/17 14:00	07/19/17 18:54	1
Barium	ND		0.0050	0.0022	mg/L		07/18/17 14:00	07/19/17 18:54	1
Beryllium	ND		0.0010	0.00031	mg/L		07/18/17 14:00	07/19/17 18:54	1
Calcium	ND		1.0	0.58	mg/L		07/18/17 14:00	07/19/17 18:54	1
Cadmium	ND		0.0010	0.00021	mg/L		07/18/17 14:00	07/19/17 18:54	1
Cobalt	ND		0.0010	0.00019	mg/L		07/18/17 14:00	07/19/17 18:54	1
Chromium	ND		0.0020	0.00098	mg/L		07/18/17 14:00	07/19/17 18:54	1
Molybdenum	ND		0.010	0.0011	mg/L		07/18/17 14:00	07/19/17 18:54	1
Lead	ND		0.0010	0.00045	mg/L		07/18/17 14:00	07/19/17 18:54	1
Selenium	ND		0.0050	0.00089	mg/L		07/18/17 14:00	07/19/17 18:54	1
Thallium	ND		0.0010	0.00020	mg/L		07/18/17 14:00	07/19/17 18:54	1
Lithium	ND		0.0080	0.0017	mg/L		07/18/17 14:00	07/19/17 18:54	1

Lab Sample ID: LCS 240-287671/3-A
Matrix: Water
Analysis Batch: 287962

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 287671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0968		mg/L		97	80 - 120
Arsenic	1.00	0.973		mg/L		97	80 - 120
Barium	1.00	0.983		mg/L		98	80 - 120
Beryllium	1.00	0.948		mg/L		95	80 - 120
Calcium	10.0	9.57		mg/L		96	80 - 120
Cadmium	1.00	1.04		mg/L		104	80 - 120
Cobalt	1.00	1.02		mg/L		102	80 - 120
Chromium	1.00	0.966		mg/L		97	80 - 120
Molybdenum	0.100	0.0956		mg/L		96	80 - 120
Lead	1.00	1.00		mg/L		100	80 - 120
Selenium	1.00	0.970		mg/L		97	80 - 120
Thallium	0.250	0.244		mg/L		98	80 - 120
Lithium	0.100	0.106		mg/L		106	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-382229/1-A
Matrix: Water
Analysis Batch: 382363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		07/27/17 11:42	07/27/17 16:20	1

Lab Sample ID: LCS 280-382229/2-A
Matrix: Water
Analysis Batch: 382363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00498		mg/L		100	84 - 120

Lab Sample ID: 280-99214-1 MS
Matrix: Water
Analysis Batch: 382363

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 382229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00500	0.00491		mg/L		98	75 - 125

Lab Sample ID: 280-99214-1 MSD
Matrix: Water
Analysis Batch: 382363

Client Sample ID: MW-1P
Prep Type: Total/NA
Prep Batch: 382229

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00475		mg/L		95	75 - 125	3	20

Method: 9040B - pH

Lab Sample ID: LCS 280-380957/29
Matrix: Water
Analysis Batch: 380957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-380957/4
Matrix: Water
Analysis Batch: 380957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-380957/54
Matrix: Water
Analysis Batch: 380957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9040B - pH (Continued)

Lab Sample ID: 280-99214-7 DU
Matrix: Water
Analysis Batch: 380957

Client Sample ID: MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH adj. to 25 deg C	7.7	HF		7.7		SU				0	5
Temperature	22.2	HF		22.3		Degrees C				0.3	10

Lab Sample ID: LCS 280-381101/4
Matrix: Water
Analysis Batch: 381101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH adj. to 25 deg C			7.00	7.1		SU		101	99 - 101		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-381130/6
Matrix: Water
Analysis Batch: 381130

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			07/18/17 10:13	1
Fluoride	ND		0.50	0.060	mg/L			07/18/17 10:13	1
Sulfate	ND		5.0	0.23	mg/L			07/18/17 10:13	1

Lab Sample ID: LCS 280-381130/4
Matrix: Water
Analysis Batch: 381130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			100	101		mg/L		101	90 - 110		
Fluoride			5.00	5.16		mg/L		103	90 - 110		
Sulfate			100	100		mg/L		100	90 - 110		

Lab Sample ID: LCSD 280-381130/5
Matrix: Water
Analysis Batch: 381130

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			100	99.9		mg/L		100	90 - 110	1	10
Fluoride			5.00	5.13		mg/L		103	90 - 110	1	10
Sulfate			100	100		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-381130/3
Matrix: Water
Analysis Batch: 381130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			2.50	2.14	J	mg/L		86	50 - 150		
Fluoride			0.200	0.154	J	mg/L		77	50 - 150		
Sulfate			2.50	2.14	J	mg/L		86	50 - 150		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-99214-1 MS
Matrix: Water
Analysis Batch: 381130

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	82		25.0	108		mg/L		102	80 - 120
Fluoride	0.91		5.00	5.88		mg/L		99	80 - 120
Sulfate	63		25.0	89.0		mg/L		103	80 - 120

Lab Sample ID: 280-99214-1 MSD
Matrix: Water
Analysis Batch: 381130

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	82		25.0	108		mg/L		103	80 - 120	0	20
Fluoride	0.91		5.00	5.92		mg/L		100	80 - 120	1	20
Sulfate	63		25.0	89.4		mg/L		105	80 - 120	0	20

Lab Sample ID: 280-99214-10 MS
Matrix: Water
Analysis Batch: 381130

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	56		25.0	81.5		mg/L		102	80 - 120
Fluoride	1.7		5.00	6.36		mg/L		94	80 - 120
Sulfate	67		25.0	88.6		mg/L		87	80 - 120

Lab Sample ID: 280-99214-10 MSD
Matrix: Water
Analysis Batch: 381130

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	56		25.0	81.8		mg/L		103	80 - 120	0	20
Fluoride	1.7		5.00	6.43		mg/L		96	80 - 120	1	20
Sulfate	67		25.0	88.4		mg/L		86	80 - 120	0	20

Lab Sample ID: 280-99214-1 DU
Matrix: Water
Analysis Batch: 381130

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	82		82.1		mg/L		0.2	15
Fluoride	0.91		0.910		mg/L		0.4	15
Sulfate	63		62.7		mg/L		0.7	15

Lab Sample ID: 280-99214-10 DU
Matrix: Water
Analysis Batch: 381130

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	56		55.5		mg/L		0.9	15
Fluoride	1.7		1.64		mg/L		0.7	15
Sulfate	67		61.3		mg/L		9	15

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-381274/6
Matrix: Water
Analysis Batch: 381274

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	0.23	mg/L			07/19/17 10:31	1

Lab Sample ID: LCS 280-381274/4
Matrix: Water
Analysis Batch: 381274

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-381274/5
Matrix: Water
Analysis Batch: 381274

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	100	101		mg/L		101	90 - 110	1	10

Lab Sample ID: MRL 280-381274/3
Matrix: Water
Analysis Batch: 381274

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.50	2.70	J	mg/L		108	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-381058/1
Matrix: Water
Analysis Batch: 381058

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/17/17 15:53	1

Lab Sample ID: LCS 280-381058/2
Matrix: Water
Analysis Batch: 381058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	511		mg/L		102	86 - 110

Lab Sample ID: LCSD 280-381058/25
Matrix: Water
Analysis Batch: 381058

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	500	504		mg/L		101	86 - 110	1	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 280-381351/1
Matrix: Water
Analysis Batch: 381351

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/19/17 14:45	1

Lab Sample ID: LCS 280-381351/2
Matrix: Water
Analysis Batch: 381351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	490		mg/L		98	86 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-381067/2
Matrix: Water
Analysis Batch: 381067

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			07/17/17 17:24	1

Lab Sample ID: LCS 280-381067/1
Matrix: Water
Analysis Batch: 381067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	101		mg/L		101	86 - 114

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-318122/1-A
Matrix: Water
Analysis Batch: 321566

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 318122

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.003033	U	0.0336	0.0336	1.00	0.0716	pCi/L	07/19/17 08:58	08/10/17 09:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*07/19/17 08:58*	*08/10/17 09:00*	*1*

Lab Sample ID: LCS 160-318122/2-A
Matrix: Water
Analysis Batch: 321566

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318122

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	10.20		1.04	1.00	0.0758	pCi/L	90	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*

Lab Sample ID: LCSD 160-318122/3-A
Matrix: Water
Analysis Batch: 321566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 318122

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	10.09		1.04	1.00	0.0844	pCi/L	89	68 - 137	0.05	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-318133/1-A
Matrix: Water
Analysis Batch: 319475

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 318133

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.03951	U	0.157	0.157	1.00	0.291	pCi/L	07/19/17 09:53	07/27/17 14:37	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:37*	*1*
Y Carrier	*95.2*		*40 - 110*	*07/19/17 09:53*	*07/27/17 14:37*	*1*

Lab Sample ID: LCS 160-318133/2-A
Matrix: Water
Analysis Batch: 319475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318133

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.1	13.32		1.42	1.00	0.281	pCi/L	101	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*
Y Carrier	*90.7*		*40 - 110*

Lab Sample ID: LCSD 160-318133/3-A
Matrix: Water
Analysis Batch: 319475

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 318133

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.1	12.53		1.33	1.00	0.283	pCi/L	95	56 - 140	0.29	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*
Y Carrier	*102*		*40 - 110*

Metals

Prep Batch: 287671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total Recoverable	Water	3005A	
280-99214-2	MW-7	Total Recoverable	Water	3005A	
280-99214-3	MW-1	Total Recoverable	Water	3005A	
280-99214-4	MW-3	Total Recoverable	Water	3005A	
280-99214-5	MW-4	Total Recoverable	Water	3005A	
280-99214-6	MW-6	Total Recoverable	Water	3005A	
280-99214-7	MW-8	Total Recoverable	Water	3005A	
280-99214-8	MW-9	Total Recoverable	Water	3005A	
280-99214-9	MW-10	Total Recoverable	Water	3005A	
280-99214-10	MW-11	Total Recoverable	Water	3005A	
280-99214-11	MW-12	Total Recoverable	Water	3005A	
280-99214-12	MW-10D	Total Recoverable	Water	3005A	
280-99214-13	MW-1PBEB	Total Recoverable	Water	3005A	
MB 240-287671/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-287671/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-287671/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 287962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total Recoverable	Water	6020A	287671
280-99214-2	MW-7	Total Recoverable	Water	6020A	287671
280-99214-3	MW-1	Total Recoverable	Water	6020A	287671
280-99214-4	MW-3	Total Recoverable	Water	6020A	287671
280-99214-5	MW-4	Total Recoverable	Water	6020A	287671
280-99214-6	MW-6	Total Recoverable	Water	6020A	287671
280-99214-7	MW-8	Total Recoverable	Water	6020A	287671
280-99214-8	MW-9	Total Recoverable	Water	6020A	287671
280-99214-9	MW-10	Total Recoverable	Water	6020A	287671
280-99214-10	MW-11	Total Recoverable	Water	6020A	287671
280-99214-11	MW-12	Total Recoverable	Water	6020A	287671
280-99214-12	MW-10D	Total Recoverable	Water	6020A	287671
280-99214-13	MW-1PBEB	Total Recoverable	Water	6020A	287671
MB 240-287671/1-A	Method Blank	Total Recoverable	Water	6020A	287671
LCS 240-287671/3-A	Lab Control Sample	Total Recoverable	Water	6020A	287671

Analysis Batch: 288117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total Recoverable	Water	6010C	287671
280-99214-2	MW-7	Total Recoverable	Water	6010C	287671
280-99214-3	MW-1	Total Recoverable	Water	6010C	287671
280-99214-4	MW-3	Total Recoverable	Water	6010C	287671
280-99214-5	MW-4	Total Recoverable	Water	6010C	287671
280-99214-6	MW-6	Total Recoverable	Water	6010C	287671
280-99214-7	MW-8	Total Recoverable	Water	6010C	287671
280-99214-8	MW-9	Total Recoverable	Water	6010C	287671
280-99214-9	MW-10	Total Recoverable	Water	6010C	287671
280-99214-10	MW-11	Total Recoverable	Water	6010C	287671
280-99214-11	MW-12	Total Recoverable	Water	6010C	287671
280-99214-12	MW-10D	Total Recoverable	Water	6010C	287671
280-99214-13	MW-1PBEB	Total Recoverable	Water	6010C	287671
MB 240-287671/1-A	Method Blank	Total Recoverable	Water	6010C	287671

Metals (Continued)

Analysis Batch: 288117 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-287671/2-A	Lab Control Sample	Total Recoverable	Water	6010C	287671

Analysis Batch: 288179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total Recoverable	Water	6020A	287671
280-99214-2	MW-7	Total Recoverable	Water	6020A	287671
280-99214-3	MW-1	Total Recoverable	Water	6020A	287671
280-99214-4	MW-3	Total Recoverable	Water	6020A	287671
280-99214-5	MW-4	Total Recoverable	Water	6020A	287671
280-99214-6	MW-6	Total Recoverable	Water	6020A	287671
280-99214-7	MW-8	Total Recoverable	Water	6020A	287671
280-99214-8	MW-9	Total Recoverable	Water	6020A	287671
280-99214-9	MW-10	Total Recoverable	Water	6020A	287671
280-99214-10	MW-11	Total Recoverable	Water	6020A	287671
280-99214-11	MW-12	Total Recoverable	Water	6020A	287671
280-99214-12	MW-10D	Total Recoverable	Water	6020A	287671

Prep Batch: 382229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	7470A	
280-99214-2	MW-7	Total/NA	Water	7470A	
280-99214-3	MW-1	Total/NA	Water	7470A	
280-99214-4	MW-3	Total/NA	Water	7470A	
280-99214-5	MW-4	Total/NA	Water	7470A	
280-99214-6	MW-6	Total/NA	Water	7470A	
280-99214-7	MW-8	Total/NA	Water	7470A	
280-99214-8	MW-9	Total/NA	Water	7470A	
280-99214-9	MW-10	Total/NA	Water	7470A	
280-99214-10	MW-11	Total/NA	Water	7470A	
280-99214-11	MW-12	Total/NA	Water	7470A	
280-99214-12	MW-10D	Total/NA	Water	7470A	
280-99214-13	MW-1PBEB	Total/NA	Water	7470A	
MB 280-382229/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-382229/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-99214-1 MS	MW-1P	Total/NA	Water	7470A	
280-99214-1 MSD	MW-1P	Total/NA	Water	7470A	

Analysis Batch: 382363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	7470A	382229
280-99214-2	MW-7	Total/NA	Water	7470A	382229
280-99214-3	MW-1	Total/NA	Water	7470A	382229
280-99214-4	MW-3	Total/NA	Water	7470A	382229
280-99214-5	MW-4	Total/NA	Water	7470A	382229
280-99214-6	MW-6	Total/NA	Water	7470A	382229
280-99214-7	MW-8	Total/NA	Water	7470A	382229
280-99214-8	MW-9	Total/NA	Water	7470A	382229
280-99214-9	MW-10	Total/NA	Water	7470A	382229
280-99214-10	MW-11	Total/NA	Water	7470A	382229
280-99214-11	MW-12	Total/NA	Water	7470A	382229
280-99214-12	MW-10D	Total/NA	Water	7470A	382229

Metals (Continued)

Analysis Batch: 382363 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-13	MW-1PBEB	Total/NA	Water	7470A	382229
MB 280-382229/1-A	Method Blank	Total/NA	Water	7470A	382229
LCS 280-382229/2-A	Lab Control Sample	Total/NA	Water	7470A	382229
280-99214-1 MS	MW-1P	Total/NA	Water	7470A	382229
280-99214-1 MSD	MW-1P	Total/NA	Water	7470A	382229

General Chemistry

Analysis Batch: 380957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	9040B	
280-99214-2	MW-7	Total/NA	Water	9040B	
280-99214-3	MW-1	Total/NA	Water	9040B	
280-99214-4	MW-3	Total/NA	Water	9040B	
280-99214-5	MW-4	Total/NA	Water	9040B	
280-99214-6	MW-6	Total/NA	Water	9040B	
280-99214-7	MW-8	Total/NA	Water	9040B	
280-99214-8	MW-9	Total/NA	Water	9040B	
280-99214-9	MW-10	Total/NA	Water	9040B	
280-99214-10	MW-11	Total/NA	Water	9040B	
280-99214-11	MW-12	Total/NA	Water	9040B	
280-99214-12	MW-10D	Total/NA	Water	9040B	
LCS 280-380957/29	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-380957/4	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-380957/54	Lab Control Sample	Total/NA	Water	9040B	
280-99214-7 DU	MW-8	Total/NA	Water	9040B	

Analysis Batch: 381058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	SM 2540C	
280-99214-2	MW-7	Total/NA	Water	SM 2540C	
280-99214-3	MW-1	Total/NA	Water	SM 2540C	
280-99214-8	MW-9	Total/NA	Water	SM 2540C	
280-99214-9	MW-10	Total/NA	Water	SM 2540C	
280-99214-10	MW-11	Total/NA	Water	SM 2540C	
280-99214-11	MW-12	Total/NA	Water	SM 2540C	
280-99214-12	MW-10D	Total/NA	Water	SM 2540C	
280-99214-13	MW-1PBEB	Total/NA	Water	SM 2540C	
MB 280-381058/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-381058/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-381058/25	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 381067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	SM 2540D	
280-99214-2	MW-7	Total/NA	Water	SM 2540D	
280-99214-3	MW-1	Total/NA	Water	SM 2540D	
280-99214-4	MW-3	Total/NA	Water	SM 2540D	
280-99214-5	MW-4	Total/NA	Water	SM 2540D	
280-99214-6	MW-6	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 381067 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-7	MW-8	Total/NA	Water	SM 2540D	
280-99214-8	MW-9	Total/NA	Water	SM 2540D	
280-99214-9	MW-10	Total/NA	Water	SM 2540D	
280-99214-10	MW-11	Total/NA	Water	SM 2540D	
280-99214-11	MW-12	Total/NA	Water	SM 2540D	
280-99214-12	MW-10D	Total/NA	Water	SM 2540D	
280-99214-13	MW-1PBEB	Total/NA	Water	SM 2540D	
MB 280-381067/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-381067/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 381101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-13	MW-1PBEB	Total/NA	Water	9040B	
LCS 280-381101/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 381130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	9056A	
280-99214-2	MW-7	Total/NA	Water	9056A	
280-99214-3	MW-1	Total/NA	Water	9056A	
280-99214-3	MW-1	Total/NA	Water	9056A	
280-99214-4	MW-3	Total/NA	Water	9056A	
280-99214-5	MW-4	Total/NA	Water	9056A	
280-99214-5	MW-4	Total/NA	Water	9056A	
280-99214-6	MW-6	Total/NA	Water	9056A	
280-99214-6	MW-6	Total/NA	Water	9056A	
280-99214-7	MW-8	Total/NA	Water	9056A	
280-99214-7	MW-8	Total/NA	Water	9056A	
280-99214-8	MW-9	Total/NA	Water	9056A	
280-99214-8	MW-9	Total/NA	Water	9056A	
280-99214-9	MW-10	Total/NA	Water	9056A	
280-99214-9	MW-10	Total/NA	Water	9056A	
280-99214-10	MW-11	Total/NA	Water	9056A	
280-99214-11	MW-12	Total/NA	Water	9056A	
280-99214-12	MW-10D	Total/NA	Water	9056A	
280-99214-12	MW-10D	Total/NA	Water	9056A	
280-99214-13	MW-1PBEB	Total/NA	Water	9056A	
MB 280-381130/6	Method Blank	Total/NA	Water	9056A	
LCS 280-381130/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-381130/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-381130/3	Lab Control Sample	Total/NA	Water	9056A	
280-99214-1 MS	MW-1P	Total/NA	Water	9056A	
280-99214-1 MSD	MW-1P	Total/NA	Water	9056A	
280-99214-10 MS	MW-11	Total/NA	Water	9056A	
280-99214-10 MSD	MW-11	Total/NA	Water	9056A	
280-99214-1 DU	MW-1P	Total/NA	Water	9056A	
280-99214-10 DU	MW-11	Total/NA	Water	9056A	

Analysis Batch: 381274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-4	MW-3	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 381274 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-381274/6	Method Blank	Total/NA	Water	9056A	
LCS 280-381274/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-381274/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-381274/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 381351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-4	MW-3	Total/NA	Water	SM 2540C	
280-99214-5	MW-4	Total/NA	Water	SM 2540C	
280-99214-6	MW-6	Total/NA	Water	SM 2540C	
280-99214-7	MW-8	Total/NA	Water	SM 2540C	
MB 280-381351/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-381351/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 318122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	PrecSep-21	
280-99214-2	MW-7	Total/NA	Water	PrecSep-21	
280-99214-3	MW-1	Total/NA	Water	PrecSep-21	
280-99214-4	MW-3	Total/NA	Water	PrecSep-21	
280-99214-5	MW-4	Total/NA	Water	PrecSep-21	
280-99214-6	MW-6	Total/NA	Water	PrecSep-21	
280-99214-7	MW-8	Total/NA	Water	PrecSep-21	
280-99214-8	MW-9	Total/NA	Water	PrecSep-21	
280-99214-9	MW-10	Total/NA	Water	PrecSep-21	
280-99214-10	MW-11	Total/NA	Water	PrecSep-21	
280-99214-11	MW-12	Total/NA	Water	PrecSep-21	
280-99214-12	MW-10D	Total/NA	Water	PrecSep-21	
280-99214-13	MW-1PBEB	Total/NA	Water	PrecSep-21	
MB 160-318122/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-318122/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-318122/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 318133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-99214-1	MW-1P	Total/NA	Water	PrecSep_0	
280-99214-2	MW-7	Total/NA	Water	PrecSep_0	
280-99214-3	MW-1	Total/NA	Water	PrecSep_0	
280-99214-4	MW-3	Total/NA	Water	PrecSep_0	
280-99214-5	MW-4	Total/NA	Water	PrecSep_0	
280-99214-6	MW-6	Total/NA	Water	PrecSep_0	
280-99214-7	MW-8	Total/NA	Water	PrecSep_0	
280-99214-8	MW-9	Total/NA	Water	PrecSep_0	
280-99214-9	MW-10	Total/NA	Water	PrecSep_0	
280-99214-10	MW-11	Total/NA	Water	PrecSep_0	
280-99214-11	MW-12	Total/NA	Water	PrecSep_0	
280-99214-12	MW-10D	Total/NA	Water	PrecSep_0	
280-99214-13	MW-1PBEB	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 318133 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-318133/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-318133/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-318133/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-1P

Date Collected: 07/13/17 13:05
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:25	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 05:55	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:04	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 16:42	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 08:12	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 10:31	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.93 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.93 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 07/10/17 10:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:30	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 05:59	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:17	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 16:49	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 11:47	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 11:42	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.44 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.44 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-1

Date Collected: 07/11/17 16:08
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:34	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:04	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:21	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 16:51	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 10:48	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 12:00	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	381130	07/18/17 20:34	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.65 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.65 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Client Sample ID: MW-3

Date Collected: 07/13/17 10:57
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:38	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:08	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:25	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 16:53	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 08:07	A1D	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	381274	07/19/17 15:59	AFB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 12:18	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	381351	07/19/17 14:45	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.25 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.25 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-4

Date Collected: 07/12/17 11:03
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:43	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:12	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:29	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 16:55	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 10:43	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 12:36	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	381130	07/18/17 21:09	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	381351	07/19/17 14:45	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.22 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.22 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 07/10/17 14:20
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:47	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:16	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:34	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 16:57	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 11:18	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 12:54	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	381130	07/18/17 13:11	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	381351	07/19/17 14:45	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			750.03 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			750.03 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-8

Date Collected: 07/10/17 12:55
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 15:51	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:21	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:38	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:04	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 11:37	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 18:06	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	381130	07/18/17 22:03	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	381351	07/19/17 14:45	JAP	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.36 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.36 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 07/12/17 13:33
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 16:04	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:25	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:42	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:06	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 10:53	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 18:24	AFB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	381130	07/18/17 22:20	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.42 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.42 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-10

Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 16:09	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:38	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:47	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:09	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 11:13	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 19:05	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	381130	07/18/17 22:38	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.59 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.59 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Client Sample ID: MW-11

Date Collected: 07/12/17 17:04
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 16:22	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:42	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:51	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:11	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 11:08	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 19:22	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:38	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-12

Date Collected: 07/12/17 15:50
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 16:26	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:46	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 00:55	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:13	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 11:03	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 19:40	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.07 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.07 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Client Sample ID: MW-10D

Date Collected: 07/11/17 15:00
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 16:30	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:51	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			288179	07/21/17 01:08	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:15	CDH	TAL DEN
Total/NA	Analysis	9040B		1			380957	07/15/17 10:58	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 19:58	AFB	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	381130	07/18/17 23:50	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.87 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.87 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Client Sample ID: MW-1PBEB

Date Collected: 07/13/17 13:35
Date Received: 07/13/17 17:00

Lab Sample ID: 280-99214-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010C		1			288117	07/20/17 16:39	KLC	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	287671	07/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1			287962	07/20/17 06:55	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	382229	07/27/17 11:42	CDH	TAL DEN
Total/NA	Analysis	7470A		1			382363	07/27/17 17:17	CDH	TAL DEN
Total/NA	Analysis	9040B		1			381101	07/17/17 16:25	A1D	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	381130	07/18/17 20:16	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381058	07/17/17 15:53	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	381067	07/17/17 17:24	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.01 mL	1.0 g	318122	07/19/17 08:58	LDE	TAL SL
Total/NA	Analysis	9315		1			321566	08/10/17 09:02	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.01 mL	1.0 g	318133	07/19/17 09:53	LDE	TAL SL
Total/NA	Analysis	9320		1			319475	07/27/17 14:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			321696	08/10/17 16:27	RTM	TAL SL

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Water	Mercury
9040B		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-18
Connecticut	State Program	1	PH-0590	12-31-17 *
Florida	NELAP	4	E87225	06-30-18
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-18 *
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17 *
Minnesota	NELAP	5	039-999-348	12-31-17 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17 *
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-14-17 *
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-17 *
Texas	NELAP	6	T104704517-15-5	08-31-17 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-17 *
Washington	State Program	10	C971	01-12-18 *
West Virginia DEP	State Program	3	210	12-31-17 *
Wisconsin	State Program	5	999518190	08-31-17 *

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: HDR Inc
TestAmerica Job ID: 280-99214-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17 *
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17 *
West Virginia DEP	State Program	3	381	08-31-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: J. Bills	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 2
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

280-99214 Chain of Custody

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Unit 6 MW-1~~ MW-1P	7/13/17	1305	G	Water		N	1	2	1	1	2		
MW-7	7/10/17	1055	G	Water		N	1	2	1	1	2	7	
MW-1	7/11/17	1608	G	Water		N	1	2	1	1	2		
MW-3	7/13/17	1057	G	Water		N	1	2	1	1	2		
MW-4	7/12/17	1103	G	Water		N	1	2	1	1	2		
MW-6	7/10/17	1420	G	Water		N	1	2	1	1	2		
MW-8	7/10/17	1255	G	Water		N	1	2	1	1	2		
MW-9	7/12/17	1333	G	Water		N	1	2	1	1	2		
MW-10	7/11/17	1500	G	Water		N	1	2	1	1	2		
MW-11	7/12/17	1704	G	Water		N	1	2	1	1	2		
MW-12	7/12/17	1550	G	Water		N	1	2	1	1	2		

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:	Method of Shipment: 1760	
Relinquished by: [signature]	Date/Time: 7/13/17 1700	Company: HDR	Received by: [signature]	Date/Time: 7/13/17 ~~0850~~ KP7-13-17	Company: TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.2, 3.1, 3.0, 3.0, 2.1, 0.7 IR# 20.0 Transfer RP 2-2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: A. Morgan	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 832-418-3307	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 2 of 2
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Field Duplicate~~ MW-10D	7/11/17	1500	G	Water		N	1	2	1	1	2		
~~Equipment Blank~~ EW-1PB	7/13/17	1335	G	Water		N	1	2	1	1	2		

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		7/13/17 1800	HDR		7/13/17 1700	FTS
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: J. Bills	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 518-331-7027	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 2
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): Standard			
State, Zip: CO, 80112				
Phone: 720-633-2380(Tel)	PO #: DEN-001			
Email: anna.lundin@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

280-99214 Chain of Custody

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Unit 6 MW-1~~ MW-1P	7/13/17	1305	G	Water		N	1	2	1	1	2		
MW-7	7/10/17	1055	G	Water		N	1	2	1	1	2	7	
MW-1	7/11/17	1608	G	Water		N	1	2	1	1	2		
MW-3	7/13/17	1057	G	Water		N	1	2	1	1	2		
MW-4	7/12/17	1103	G	Water		N	1	2	1	1	2		
MW-6	7/10/17	1420	G	Water		N	1	2	1	1	2		
MW-8	7/10/17	1255	G	Water		N	1	2	1	1	2		
MW-9	7/12/17	1333	G	Water		N	1	2	1	1	2		
MW-10	7/11/17	1500	G	Water		N	1	2	1	1	2		
MW-11	7/12/17	1704	G	Water		N	1	2	1	1	2		
MW-12	7/12/17	1550	G	Water		N	1	2	1	1	2		

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: 1760		
Relinquished by: [signature]	Date/Time: 7/13/17 1700	Company: HDR	Received by: [signature]	Date/Time: 7/13/17 ~~0850~~ KP7-13-17	Company: TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.2, 3.1, 3.0, 3.0, 2.1, 0.7 IR# 20.0 Transfer RP 7-13-17

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: A. Morgan	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Anna Lundin	Phone: 832-418-3307	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 2 of 2
Company: HDR Inc				Job #:

Address: 9781 S. Meridian Blve Suite 400	Due Date Requested:
City: Englewood	TAT Requested (days): Standard
State, Zip: CO, 80112	
Phone: 720-633-2380(Tel)	PO #: DEN-001
Email: anna.lundin@hdrinc.com	WO #:
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379
Site: Colorado	SSOW#:

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - Total Dissolved Solids (TDS)	Metals - 6020A, 7470A	pH - 9040B, Anions - 9056A_28D	2540D - Total Suspended Solids	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	N	D		
~~Field Duplicate~~ MW-10D	7/11/17	1500	G	Water		N	1	2	1	1	2		
~~Equipment Blank~~ EW-1PB	7/13/17	1335	G	Water		N	1	2	1	1	2		

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 7/13/17 1800	Company: HDR	Received by:	Date/Time: 7/13/17 1700	Company: FED
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record


280-99214 Chain of Custody

testAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie .	C No: 280-405920.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA	Page: Page 1 of 2
Address: 13715 Rider Trail North, ,	Due Date Requested: 8/11/2017		Job #: 280-99214-1
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Xcel Energy CCR - Valmont Station	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1P (280-99214-1)	7/13/17	13:05 Mountain		Water			X	X	X	2	
MW-7 (280-99214-2)	7/10/17	10:55 Mountain		Water			X	X	X	2	
MW-1 (280-99214-3)	7/11/17	16:08 Mountain		Water			X	X	X	2	
MW-3 (280-99214-4)	7/13/17	10:57 Mountain		Water			X	X	X	2	
MW-4 (280-99214-5)	7/12/17	11:03 Mountain		Water			X	X	X	2	
MW-6 (280-99214-6)	7/10/17	14:20 Mountain		Water			X	X	X	2	
MW-8 (280-99214-7)	7/10/17	12:55 Mountain		Water			X	X	X	2	
MW-9 (280-99214-8)	7/12/17	13:33 Mountain		Water			X	X	X	2	
MW-10 (280-99214-9)	7/11/17	15:00 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 7/14/17 1400	Company	Received by:	Date/Time: 7/15/17 0900	Company TA S+L
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-405920.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-99214-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 8/11/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC/ (MOD) Local Method	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-11 (280-99214-10)	7/12/17	17:04 Mountain		Water			X	X	X	2	
MW-12 (280-99214-11)	7/12/17	15:50 Mountain		Water			X	X	X	2	
MW-10D (280-99214-12)	7/11/17	15:00 Mountain		Water			X	X	X	2	
EW-1PB (280-99214-13)	7/13/17	13:35 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		7/14/17 1400			7/15/17 0900	TAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

14.2/14.2
17.6/17.6

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-405921.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-99214-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 8/8/2017			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

SSY

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1P (280-99214-1)	7/13/17	13:05 Mountain		Water			X	X	1	, Use Collision Cell
MW-7 (280-99214-2)	7/10/17	10:55 Mountain		Water			X	X	1	Use Collision Cell
MW-1 (280-99214-3)	7/11/17	16:08 Mountain		Water			X	X	1	, Use Collision Cell
MW-3 (280-99214-4)	7/13/17	10:57 Mountain		Water			X	X	1	Use Collision Cell
MW-4 (280-99214-5)	7/12/17	11:03 Mountain		Water			X	X	1	, Use Collision Cell
MW-6 (280-99214-6)	7/10/17	14:20 Mountain		Water			X	X	1	Use Collision Cell
MW-8 (280-99214-7)	7/10/17	12:55 Mountain		Water			X	X	1	, Use Collision Cell
MW-9 (280-99214-8)	7/12/17	13:33 Mountain		Water			X	X	1	Use Collision Cell
MW-10 (280-99214-9)	7/11/17	15:00 Mountain		Water			X	X	1	, Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	7/14/17 1415	TAD		7/15/17 0940	TA

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

8/10/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-405921.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 280-99214-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 8/8/2017			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Boron	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	SSY Special Instructions/Note:
			Preservation Code:							
MW-11 (280-99214-10)	7/12/17	17:04 Mountain		Water			X	X	1	Use Collision Cell
MW-12 (280-99214-11)	7/12/17	15:50 Mountain		Water			X	X	1	, Use Collision Cell
MW-10D (280-99214-12)	7/11/17	15:00 Mountain		Water			X	X	1	Use Collision Cell
EW-1PB (280-99214-13)	7/13/17	13:35 Mountain		Water			X	X	1	, Use Collision Cell

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	7/14/17 1415	TAL	[signature]	7/15/17 940	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____

Canton Facility

Cooler unpacked by:

Client TA Denver Site Name _____

Cooler Received on 7/15/17 Opened on 7/15/17

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt — See Multiple Cooler Form
   IR GUN# IR-8 (CF **-0.4** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #36 (CF **+0**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC697954**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

_____

17. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s):_____.

Ref: SOP NC-SC-0005, Sample Receiving

\\tacorp\corp\QA\QA_Facilities\Canton-QA\Document-Management\Work-Instruction\Word Version Work Instructions\WI-NC-099-052317 Cooler Receipt Form.doc djf

TestAmerica Multiple Cooler Receipt Form/Narrative **Login # :**_____

Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Client	3L6	14.2	14.2	Ice
↓	↓	17L6	17.6	↓

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-99214-1

Login Number: 99214
List Number: 1
Creator: Pottruff, Reed W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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.	N/A	
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	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-99214-1

Login Number: 99214
List Number: 2
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 07/15/17 01:30 PM

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.	N/A	
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	20.0,20.0,20.0,20.0
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?	False	
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	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

TestAmerica Job ID: 280-99214-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-99214-1	MW-1P	94.1
280-99214-2	MW-7	102
280-99214-3	MW-1	90.6
280-99214-4	MW-3	98.8
280-99214-5	MW-4	102
280-99214-6	MW-6	96.5
280-99214-7	MW-8	99.4
280-99214-8	MW-9	98.8
280-99214-9	MW-10	98.8
280-99214-10	MW-11	98.8
280-99214-11	MW-12	93.2
280-99214-12	MW-10D	98.8
280-99214-13	MW-1PBEB	104
LCS 160-318122/2-A	Lab Control Sample	105
LCSD 160-318122/3-A	Lab Control Sample Dup	103
MB 160-318122/1-A	Method Blank	106

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-99214-1	MW-1P	94.1	89.7
280-99214-2	MW-7	102	90.0
280-99214-3	MW-1	90.6	86.2
280-99214-4	MW-3	98.8	102
280-99214-5	MW-4	102	107
280-99214-6	MW-6	96.5	99.4
280-99214-7	MW-8	99.4	101
280-99214-8	MW-9	98.8	87.8
280-99214-9	MW-10	98.8	94.5
280-99214-10	MW-11	98.8	81.7
280-99214-11	MW-12	93.2	102
280-99214-12	MW-10D	98.8	96.8
280-99214-13	MW-1PBEB	104	96.8
LCS 160-318133/2-A	Lab Control Sample	105	90.7
LCSD 160-318133/3-A	Lab Control Sample Dup	103	102
MB 160-318133/1-A	Method Blank	106	95.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier