TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 280-82715-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Comanche

For:
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Authorized for release by:
6/2/2016 11:44:53 AM

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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 - Comanche

TestAmerica Job ID: 280-82715-1

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.
F1	MS and/or MSD Recovery 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.
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.
*	LCS or LCSD is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, 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: 280-82715-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Comanche

Report Number: 280-82715-1

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 5/4/2016 at 12:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 6.1º C and 7.0º C.

The samples were taken and delivered to the lab on the same day on ice, therefore the elevated temperature is acceptable.

TOTAL RECOVERABLE METALS (ICPMS)
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/10/2016 and analyzed on 05/23/2016.

Calcium failed the recovery criteria low for the MS and MSD of sample 190-10542-11 in batch 240-231186. 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-3 (280-82715-1)[5X], W-3 (280-82715-2)[20X], W-5 (280-82715-3)[20X] and W-3D (280-82715-4)[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.

TOTAL MERCURY
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 05/16/2016.

Mercury failed the recovery criteria low for the MSD of sample W-3 (280-82715-2) in batch 280-325636. 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-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 05/05/2016 and 05/10/2016.

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

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Laboratory: TestAmerica Denver (Continued)

TOTAL SUSPENDED SOLIDS
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 05/06/2016.

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

CORROSIVITY (PH)
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 05/04/2016 and 05/12/2016.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 280-82948-3. It is suspected that the probe did not have enough time to stabilize while taking the measurements.

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

ANIONS (28 DAYS)
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 05/19/2016 and 05/20/2016.

Chloride and Sulfate were detected in method blank MB 280-325836/6 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-3 (280-82715-1)[10X], MW-3 (280-82715-1)[500X], W-3 (280-82715-2)[5X], W-3 (280-82715-2)[50X], W-5 (280-82715-3)[10X], W-5 (280-82715-3)[500X], W-3D (280-82715-4)[5X] and W-3D (280-82715-4)[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.

RADIUM-226 (GFPC)
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 05/09/2016 and analyzed on 05/31/2016.

Radium-226 was detected in method blank MB 160-250112/1-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-226 failed the recovery criteria high for LCS 160-250112/2-A. This analyte was not observed above the requested limit in the associated samples; therefore the sample data was not adversely affected by this excursion. The data have been qualified and reported.

The following samples were prepared at a reduced aliquot due to sediment: MW-3 (280-82715-1), W-5 (280-82715-3).

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

RADIUM-228
Samples MW-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 05/09/2016 and analyzed on 05/13/2016.

Radium-228 was detected in method blank MB 160-250117/1-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: MW-3 (280-82715-1), W-5 (280-82715-3).

The radium-228 detection goal was not met for the following samples due to the reduced sample volume attributed to the presence of

Job ID: 280-82715-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

matrix interferences: MW-3 (280-82715-1), W-5 (280-82715-3). 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-3 (280-82715-1), W-3 (280-82715-2), W-5 (280-82715-3), W-3D (280-82715-4) and W-3EB (280-82715-5) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 06/02/2016.

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 - Comanche

TestAmerica Job ID: 280-82715-1

Client Sample ID: MW-3 — Lab Sample ID: 280-82715-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00044	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.15		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.016		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	460		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.014		0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.022		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0023		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0043	J	0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00078	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	2.7		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.0038		0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	0.47		0.10	0.055	mg/L	5		6020A	Total Recoverable
Lithium	2.3		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
Mercury	0.065	J	0.20	0.027	ug/L	1		7470A	Total/NA
pH adj. to 25 deg C	7.17	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	21.8	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	300	B	30	2.5	mg/L	10		9056A	Total/NA
Fluoride	1.3	J	5.0	0.60	mg/L	10		9056A	Total/NA
Sulfate	45000		2500	120	mg/L	500		9056A	Total/NA
Total Dissolved Solids (TDS)	58000		1000	470	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: W-3 — Lab Sample ID: 280-82715-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00073	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.012		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.015		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	380		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	0.00060	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.055		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00032	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.10		0.0050	0.00025	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 - Comanche

TestAmerica Job ID: 280-82715-1

Client Sample ID: W-3 (Continued) — Lab Sample ID: 280-82715-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.1		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	0.36		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.70	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	190	B	15	1.3	mg/L	5		9056A	Total/NA
Fluoride	1.4	J	2.5	0.30	mg/L	5		9056A	Total/NA
Sulfate	8300	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	11000		100	47	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: W-5 — Lab Sample ID: 280-82715-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00049	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.046		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.036		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Beryllium	0.00058	J	0.0010	0.000053	mg/L	1		6020A	Total Recoverable
Calcium	470		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00091	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.010		0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Chromium	0.0021		0.0020	0.00060	mg/L	1		6020A	Total Recoverable
Molybdenum	0.038		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	0.81		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Thallium	0.00020	J	0.0010	0.000074	mg/L	1		6020A	Total Recoverable
Boron	2.3		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	2.1		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	21.6	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	910	B	30	2.5	mg/L	10		9056A	Total/NA
Fluoride	7.4		5.0	0.60	mg/L	10		9056A	Total/NA
Sulfate	42000		2500	120	mg/L	500		9056A	Total/NA
Total Dissolved Solids (TDS)	61000		1000	470	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: W-3D — Lab Sample ID: 280-82715-4

This Detection Summary does not include radiochemical test results.

Detection Summary

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

TestAmerica Job ID: 280-82715-1

Client Sample ID: W-3D (Continued) — Lab Sample ID: 280-82715-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00069	J	0.0020	0.00016	mg/L	1		6020A	Total Recoverable
Arsenic	0.012		0.0050	0.00049	mg/L	1		6020A	Total Recoverable
Barium	0.015		0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Calcium	380		1.0	0.24	mg/L	1		6020A	Total Recoverable
Cadmium	0.00010	J	0.0010	0.000061	mg/L	1		6020A	Total Recoverable
Cobalt	0.00060	J	0.0010	0.000021	mg/L	1		6020A	Total Recoverable
Molybdenum	0.055		0.010	0.00023	mg/L	1		6020A	Total Recoverable
Lead	0.00022	J	0.0010	0.00011	mg/L	1		6020A	Total Recoverable
Selenium	0.099		0.0050	0.00025	mg/L	1		6020A	Total Recoverable
Boron	2.1		0.40	0.22	mg/L	20		6020A	Total Recoverable
Lithium	0.36		0.0080	0.00029	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.71	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Chloride	190	B	15	1.3	mg/L	5		9056A	Total/NA
Fluoride	1.3	J	2.5	0.30	mg/L	5		9056A	Total/NA
Sulfate	8700	B	250	12	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	12000		100	47	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: W-3EB — Lab Sample ID: 280-82715-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	5.86	HF	0.100	0.100	SU	1		9040B	Total/NA
Temperature	19.9	HF	1.00	1.00	Degrees C	1		9040B	Total/NA
Sulfate	0.36	J B	5.0	0.23	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	100		100	47	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 - Comanche

TestAmerica Job ID: 280-82715-1

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 - Comanche

TestAmerica Job ID: 280-82715-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-82715-1	MW-3	Ground Water	05/03/16 14:15	05/04/16 12:15
280-82715-2	W-3	Ground Water	05/03/16 11:10	05/04/16 12:15
280-82715-3	W-5	Ground Water	05/03/16 13:10	05/04/16 12:15
280-82715-4	W-3D	Ground Water	05/03/16 11:10	05/04/16 12:15
280-82715-5	W-3EB	Ground Water	05/03/16 11:55	05/04/16 12:15

Client Sample Results

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

TestAmerica Job ID: 280-82715-1

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

Client Sample ID: MW-3 — **Lab Sample ID: 280-82715-1**
Date Collected: 05/03/16 14:15 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00044	J	0.0020	0.00016	mg/L		05/10/16 11:51	05/23/16 18:35	1
Arsenic	0.15		0.0050	0.00049	mg/L		05/10/16 11:51	05/23/16 18:35	1
Barium	0.016		0.0050	0.0011	mg/L		05/10/16 11:51	05/23/16 18:35	1
Beryllium	ND		0.0010	0.000053	mg/L		05/10/16 11:51	05/23/16 18:35	1
Calcium	460		1.0	0.24	mg/L		05/10/16 11:51	05/23/16 18:35	1
Cadmium	0.014		0.0010	0.000061	mg/L		05/10/16 11:51	05/23/16 18:35	1
Cobalt	0.022		0.0010	0.000021	mg/L		05/10/16 11:51	05/23/16 18:35	1
Chromium	0.0023		0.0020	0.00060	mg/L		05/10/16 11:51	05/23/16 18:35	1
Molybdenum	0.0043	J	0.010	0.00023	mg/L		05/10/16 11:51	05/23/16 18:35	1
Lead	0.00078	J	0.0010	0.00011	mg/L		05/10/16 11:51	05/23/16 18:35	1
Selenium	2.7		0.0050	0.00025	mg/L		05/10/16 11:51	05/23/16 18:35	1
Thallium	0.0038		0.0010	0.000074	mg/L		05/10/16 11:51	05/23/16 18:35	1
Boron	0.47		0.10	0.055	mg/L		05/10/16 11:51	05/23/16 16:05	5
Lithium	2.3		0.0080	0.00029	mg/L		05/10/16 11:51	05/23/16 18:35	1

Client Sample ID: W-3 — **Lab Sample ID: 280-82715-2**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00073	J	0.0020	0.00016	mg/L		05/10/16 11:51	05/23/16 18:39	1
Arsenic	0.012		0.0050	0.00049	mg/L		05/10/16 11:51	05/23/16 18:39	1
Barium	0.015		0.0050	0.0011	mg/L		05/10/16 11:51	05/23/16 18:39	1
Beryllium	ND		0.0010	0.000053	mg/L		05/10/16 11:51	05/23/16 18:39	1
Calcium	380		1.0	0.24	mg/L		05/10/16 11:51	05/23/16 18:39	1
Cadmium	0.00012	J	0.0010	0.000061	mg/L		05/10/16 11:51	05/23/16 18:39	1
Cobalt	0.00060	J	0.0010	0.000021	mg/L		05/10/16 11:51	05/23/16 18:39	1
Chromium	ND		0.0020	0.00060	mg/L		05/10/16 11:51	05/23/16 18:39	1
Molybdenum	0.055		0.010	0.00023	mg/L		05/10/16 11:51	05/23/16 18:39	1
Lead	0.00032	J	0.0010	0.00011	mg/L		05/10/16 11:51	05/23/16 18:39	1
Selenium	0.10		0.0050	0.00025	mg/L		05/10/16 11:51	05/23/16 18:39	1
Thallium	ND		0.0010	0.000074	mg/L		05/10/16 11:51	05/23/16 18:39	1
Boron	2.1		0.40	0.22	mg/L		05/10/16 11:51	05/23/16 16:10	20
Lithium	0.36		0.0080	0.00029	mg/L		05/10/16 11:51	05/23/16 18:39	1

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00049	J	0.0020	0.00016	mg/L		05/10/16 11:51	05/23/16 18:43	1
Arsenic	0.046		0.0050	0.00049	mg/L		05/10/16 11:51	05/23/16 18:43	1
Barium	0.036		0.0050	0.0011	mg/L		05/10/16 11:51	05/23/16 18:43	1
Beryllium	0.00058	J	0.0010	0.000053	mg/L		05/10/16 11:51	05/23/16 18:43	1
Calcium	470		1.0	0.24	mg/L		05/10/16 11:51	05/23/16 18:43	1
Cadmium	0.00091	J	0.0010	0.000061	mg/L		05/10/16 11:51	05/23/16 18:43	1
Cobalt	0.010		0.0010	0.000021	mg/L		05/10/16 11:51	05/23/16 18:43	1
Chromium	0.0021		0.0020	0.00060	mg/L		05/10/16 11:51	05/23/16 18:43	1
Molybdenum	0.038		0.010	0.00023	mg/L		05/10/16 11:51	05/23/16 18:43	1
Lead	0.00035	J	0.0010	0.00011	mg/L		05/10/16 11:51	05/23/16 18:43	1
Selenium	0.81		0.0050	0.00025	mg/L		05/10/16 11:51	05/23/16 18:43	1
Thallium	0.00020	J	0.0010	0.000074	mg/L		05/10/16 11:51	05/23/16 18:43	1

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

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.3		0.40	0.22	mg/L		05/10/16 11:51	05/23/16 16:14	20
Lithium	2.1		0.0080	0.00029	mg/L		05/10/16 11:51	05/23/16 18:43	1

Client Sample ID: W-3D — **Lab Sample ID: 280-82715-4**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00069	J	0.0020	0.00016	mg/L		05/10/16 11:51	05/23/16 18:47	1
Arsenic	0.012		0.0050	0.00049	mg/L		05/10/16 11:51	05/23/16 18:47	1
Barium	0.015		0.0050	0.0011	mg/L		05/10/16 11:51	05/23/16 18:47	1
Beryllium	ND		0.0010	0.000053	mg/L		05/10/16 11:51	05/23/16 18:47	1
Calcium	380		1.0	0.24	mg/L		05/10/16 11:51	05/23/16 18:47	1
Cadmium	0.00010	J	0.0010	0.000061	mg/L		05/10/16 11:51	05/23/16 18:47	1
Cobalt	0.00060	J	0.0010	0.000021	mg/L		05/10/16 11:51	05/23/16 18:47	1
Chromium	ND		0.0020	0.00060	mg/L		05/10/16 11:51	05/23/16 18:47	1
Molybdenum	0.055		0.010	0.00023	mg/L		05/10/16 11:51	05/23/16 18:47	1
Lead	0.00022	J	0.0010	0.00011	mg/L		05/10/16 11:51	05/23/16 18:47	1
Selenium	0.099		0.0050	0.00025	mg/L		05/10/16 11:51	05/23/16 18:47	1
Thallium	ND		0.0010	0.000074	mg/L		05/10/16 11:51	05/23/16 18:47	1
Boron	2.1		0.40	0.22	mg/L		05/10/16 11:51	05/23/16 16:18	20
Lithium	0.36		0.0080	0.00029	mg/L		05/10/16 11:51	05/23/16 18:47	1

Client Sample ID: W-3EB — **Lab Sample ID: 280-82715-5**
Date Collected: 05/03/16 11:55 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/10/16 11:51	05/23/16 16:22	1
Arsenic	ND		0.0050	0.00049	mg/L		05/10/16 11:51	05/23/16 16:22	1
Barium	ND		0.0050	0.0011	mg/L		05/10/16 11:51	05/23/16 16:22	1
Beryllium	ND		0.0010	0.000053	mg/L		05/10/16 11:51	05/23/16 16:22	1
Calcium	ND		1.0	0.24	mg/L		05/10/16 11:51	05/23/16 16:22	1
Cadmium	ND		0.0010	0.000061	mg/L		05/10/16 11:51	05/23/16 16:22	1
Cobalt	ND		0.0010	0.000021	mg/L		05/10/16 11:51	05/23/16 16:22	1
Chromium	ND		0.0020	0.00060	mg/L		05/10/16 11:51	05/23/16 16:22	1
Molybdenum	ND		0.010	0.00023	mg/L		05/10/16 11:51	05/23/16 16:22	1
Lead	ND		0.0010	0.00011	mg/L		05/10/16 11:51	05/23/16 16:22	1
Selenium	ND		0.0050	0.00025	mg/L		05/10/16 11:51	05/23/16 16:22	1
Thallium	ND		0.0010	0.000074	mg/L		05/10/16 11:51	05/23/16 16:22	1
Boron	ND		0.020	0.011	mg/L		05/10/16 11:51	05/23/16 16:22	1
Lithium	ND		0.0080	0.00029	mg/L		05/10/16 11:51	05/23/16 16:22	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-3 — **Lab Sample ID: 280-82715-1**
Date Collected: 05/03/16 14:15 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.065	J	0.20	0.027	ug/L		05/16/16 11:55	05/16/16 19:42	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: W-3 — **Lab Sample ID: 280-82715-2**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1	0.20	0.027	ug/L		05/16/16 11:55	05/16/16 19:44	1

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/16/16 11:55	05/16/16 20:02	1

Client Sample ID: W-3D — **Lab Sample ID: 280-82715-4**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/16/16 11:55	05/16/16 20:04	1

Client Sample ID: W-3EB — **Lab Sample ID: 280-82715-5**
Date Collected: 05/03/16 11:55 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/16/16 11:55	05/16/16 20:06	1

General Chemistry

Client Sample ID: MW-3 — **Lab Sample ID: 280-82715-1**
Date Collected: 05/03/16 14:15 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.17	HF	0.100	0.100	SU			05/04/16 22:27	1
Temperature	21.8	HF	1.00	1.00	Degrees C			05/04/16 22:27	1
Chloride	300	B	30	2.5	mg/L			05/19/16 01:58	10
Fluoride	1.3	J	5.0	0.60	mg/L			05/19/16 01:58	10
Sulfate	45000		2500	120	mg/L			05/20/16 00:07	500
Total Dissolved Solids (TDS)	58000		1000	470	mg/L			05/10/16 12:00	1
Total Suspended Solids	8.8		4.0	1.1	mg/L			05/06/16 16:00	1

Client Sample ID: W-3 — **Lab Sample ID: 280-82715-2**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

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			05/04/16 22:22	1
Temperature	21.7	HF	1.00	1.00	Degrees C			05/04/16 22:22	1
Chloride	190	B	15	1.3	mg/L			05/19/16 02:38	5
Fluoride	1.4	J	2.5	0.30	mg/L			05/19/16 02:38	5
Sulfate	8300	B	250	12	mg/L			05/19/16 02:58	50
Total Dissolved Solids (TDS)	11000		100	47	mg/L			05/05/16 11:11	1
Total Suspended Solids	3.2	J	4.0	1.1	mg/L			05/06/16 16:00	1

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

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			05/04/16 22:36	1

General Chemistry (Continued)

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	21.6	HF	1.00	1.00	Degrees C			05/04/16 22:36	1
Chloride	910	B	30	2.5	mg/L			05/19/16 03:18	10
Fluoride	7.4		5.0	0.60	mg/L			05/19/16 03:18	10
Sulfate	42000		2500	120	mg/L			05/20/16 00:25	500
Total Dissolved Solids (TDS)	61000		1000	470	mg/L			05/10/16 12:00	1
Total Suspended Solids	12		4.0	1.1	mg/L			05/06/16 16:00	1

Client Sample ID: W-3D — **Lab Sample ID: 280-82715-4**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.71	HF	0.100	0.100	SU			05/04/16 22:32	1
Temperature	21.7	HF	1.00	1.00	Degrees C			05/04/16 22:32	1
Chloride	190	B	15	1.3	mg/L			05/19/16 03:58	5
Fluoride	1.3	J	2.5	0.30	mg/L			05/19/16 03:58	5
Sulfate	8700	B	250	12	mg/L			05/19/16 04:18	50
Total Dissolved Solids (TDS)	12000		100	47	mg/L			05/05/16 11:11	1
Total Suspended Solids	1.2	J	4.0	1.1	mg/L			05/06/16 16:00	1

Client Sample ID: W-3EB — **Lab Sample ID: 280-82715-5**
Date Collected: 05/03/16 11:55 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	5.86	HF	0.100	0.100	SU			05/12/16 21:06	1
Temperature	19.9	HF	1.00	1.00	Degrees C			05/12/16 21:06	1
Chloride	ND		3.0	0.25	mg/L			05/19/16 04:37	1
Fluoride	ND		0.50	0.060	mg/L			05/19/16 04:37	1
Sulfate	0.36	J B	5.0	0.23	mg/L			05/19/16 04:37	1
Total Dissolved Solids (TDS)	100		100	47	mg/L			05/05/16 11:11	1
Total Suspended Solids	ND		4.0	1.1	mg/L			05/06/16 16:00	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-3 — **Lab Sample ID: 280-82715-1**
Date Collected: 05/03/16 14:15 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.929	*	0.280	0.292	1.00	0.263	pCi/L	05/09/16 15:12	05/31/16 07:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.1*		*40 - 110*	*05/09/16 15:12*	*05/31/16 07:59*	*1*

Client Sample ID: W-3 — **Lab Sample ID: 280-82715-2**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.293	*	0.0755	0.0800	1.00	0.0696	pCi/L	05/09/16 15:12	05/31/16 07:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.5		40 - 110	05/09/16 15:12	05/31/16 07:59	1

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.715	*	0.254	0.262	1.00	0.248	pCi/L	05/09/16 15:12	05/31/16 07:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	66.7		40 - 110	05/09/16 15:12	05/31/16 07:59	1

Client Sample ID: W-3D — **Lab Sample ID: 280-82715-4**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.223	*	0.0645	0.0675	1.00	0.0582	pCi/L	05/09/16 15:12	05/31/16 07:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		40 - 110	05/09/16 15:12	05/31/16 07:59	1

Client Sample ID: W-3EB — **Lab Sample ID: 280-82715-5**
Date Collected: 05/03/16 11:55 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0331	U *	0.0337	0.0338	1.00	0.0529	pCi/L	05/09/16 15:12	05/31/16 07:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		40 - 110	05/09/16 15:12	05/31/16 07:59	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-3 — **Lab Sample ID: 280-82715-1**
Date Collected: 05/03/16 14:15 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.51	U G	1.20	1.21	1.00	1.90	pCi/L	05/09/16 16:02	05/13/16 11:48	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	05/09/16 16:02	05/13/16 11:48	1
Y Carrier	81.9		40 - 110	05/09/16 16:02	05/13/16 11:48	1

Client Sample ID: W-3 — **Lab Sample ID: 280-82715-2**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.586		0.288	0.293	1.00	0.420	pCi/L	05/09/16 16:02	05/13/16 11:48	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.5		40 - 110	05/09/16 16:02	05/13/16 11:48	1
Y Carrier	82.2		40 - 110	05/09/16 16:02	05/13/16 11:48	1

Client Sample ID: W-5 — **Lab Sample ID: 280-82715-3**
Date Collected: 05/03/16 13:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.17	U G	1.30	1.31	1.00	2.13	pCi/L	05/09/16 16:02	05/13/16 11:48	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	66.7		40 - 110	05/09/16 16:02	05/13/16 11:48	1
Y Carrier	78.9		40 - 110	05/09/16 16:02	05/13/16 11:48	1

Client Sample ID: W-3D — **Lab Sample ID: 280-82715-4**
Date Collected: 05/03/16 11:10 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.260	U	0.311	0.312	1.00	0.513	pCi/L	05/09/16 16:02	05/13/16 11:48	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		40 - 110	05/09/16 16:02	05/13/16 11:48	1
Y Carrier	80.4		40 - 110	05/09/16 16:02	05/13/16 11:48	1

Client Sample ID: W-3EB — **Lab Sample ID: 280-82715-5**
Date Collected: 05/03/16 11:55 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0581	U	0.230	0.230	1.00	0.406	pCi/L	05/09/16 16:02	05/13/16 11:49	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		40 - 110	05/09/16 16:02	05/13/16 11:49	1
Y Carrier	77.4		40 - 110	05/09/16 16:02	05/13/16 11:49	1

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

Client Sample ID: MW-3 — **Lab Sample ID: 280-82715-1**
Date Collected: 05/03/16 14:15 — **Matrix: Ground Water**
Date Received: 05/04/16 12:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.44**		1.24	1.25	5.00	1.90	pCi/L		06/02/16 00:32	1

Client Sample Results

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

TestAmerica Job ID: 280-82715-1

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

Client Sample ID: W-3
Date Collected: 05/03/16 11:10
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.878**		0.298	0.304	5.00	0.420	pCi/L		06/02/16 00:32	1

Client Sample ID: W-5
Date Collected: 05/03/16 13:10
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-3
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.88	U	1.33	1.33	5.00	2.13	pCi/L		06/02/16 00:32	1

Client Sample ID: W-3D
Date Collected: 05/03/16 11:10
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-4
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.484	U	0.317	0.319	5.00	0.513	pCi/L		06/02/16 00:32	1

Client Sample ID: W-3EB
Date Collected: 05/03/16 11:55
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-5
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0912	U	0.233	0.233	5.00	0.406	pCi/L		06/02/16 00:32	1

QC Sample Results

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

TestAmerica Job ID: 280-82715-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-229647/1-A
Matrix: Water
Analysis Batch: 232005

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 229647

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00016	mg/L		05/10/16 11:51	05/25/16 13:01	1
Arsenic	ND		0.0050	0.00049	mg/L		05/10/16 11:51	05/25/16 13:01	1
Barium	ND		0.0050	0.0011	mg/L		05/10/16 11:51	05/25/16 13:01	1
Beryllium	ND		0.0010	0.000053	mg/L		05/10/16 11:51	05/25/16 13:01	1
Calcium	ND		1.0	0.24	mg/L		05/10/16 11:51	05/25/16 13:01	1
Cadmium	ND		0.0010	0.000061	mg/L		05/10/16 11:51	05/25/16 13:01	1
Cobalt	ND		0.0010	0.000021	mg/L		05/10/16 11:51	05/25/16 13:01	1
Chromium	ND		0.0020	0.00060	mg/L		05/10/16 11:51	05/25/16 13:01	1
Molybdenum	ND		0.010	0.00023	mg/L		05/10/16 11:51	05/25/16 13:01	1
Lead	ND		0.0010	0.00011	mg/L		05/10/16 11:51	05/25/16 13:01	1
Selenium	ND		0.0050	0.00025	mg/L		05/10/16 11:51	05/25/16 13:01	1
Thallium	ND		0.0010	0.000074	mg/L		05/10/16 11:51	05/25/16 13:01	1
Boron	ND		0.020	0.011	mg/L		05/10/16 11:51	05/25/16 13:01	1
Lithium	ND		0.0080	0.00029	mg/L		05/10/16 11:51	05/25/16 13:01	1

Lab Sample ID: LCS 240-229647/2-A
Matrix: Water
Analysis Batch: 232005

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 229647

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.101		mg/L		101	80 - 120
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	1.02		mg/L		102	80 - 120
Beryllium	1.00	1.04		mg/L		104	80 - 120
Calcium	10.0	10.7		mg/L		107	80 - 120
Cadmium	1.00	1.04		mg/L		104	80 - 120
Cobalt	1.00	1.05		mg/L		105	80 - 120
Chromium	1.00	1.04		mg/L		104	80 - 120
Molybdenum	0.100	0.102		mg/L		102	80 - 120
Lead	1.00	1.05		mg/L		105	80 - 120
Selenium	1.00	1.02		mg/L		102	80 - 120
Thallium	0.250	0.260		mg/L		104	80 - 120
Boron	0.100	0.103		mg/L		103	80 - 120
Lithium	0.100	0.102		mg/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-325165/1-A
Matrix: Water
Analysis Batch: 325636

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 325165

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.027	ug/L		05/16/16 11:55	05/16/16 19:33	1

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

Lab Sample ID: LCS 280-325165/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325636 — **Prep Batch: 325165**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			5.00	5.19		ug/L		104	84 - 120		

Lab Sample ID: LCSD 280-325165/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325636 — **Prep Batch: 325165**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			5.00	5.19		ug/L		104	84 - 120	0	15

Lab Sample ID: 280-82715-2 MS — **Client Sample ID: W-3**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 325636 — **Prep Batch: 325165**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND	F1	5.00	3.90		ug/L		78	75 - 125		

Lab Sample ID: 280-82715-2 MSD — **Client Sample ID: W-3**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 325636 — **Prep Batch: 325165**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	5.00	3.55	F1	ug/L		71	75 - 125	10	20

Method: 9040B - pH

Lab Sample ID: LCS 280-323988/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 323988

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: LCSD 280-323988/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 323988

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH adj. to 25 deg C			7.00	7.020		SU		100	99 - 101	0	5

Lab Sample ID: LCS 280-325290/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325290

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH adj. to 25 deg C			7.00	6.960		SU		99	99 - 101		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-325836/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325836

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.619	J	3.0	0.25	mg/L			05/18/16 11:19	1
Fluoride	ND		0.50	0.060	mg/L			05/18/16 11:19	1
Sulfate	0.365	J	5.0	0.23	mg/L			05/18/16 11:19	1

Lab Sample ID: LCS 280-325836/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325836

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.0		mg/L		96	90 - 110
Fluoride	5.00	5.37		mg/L		107	90 - 110
Sulfate	100	95.6		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-325836/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325836

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	95.4		mg/L		95	90 - 110	1	10
Fluoride	5.00	5.33		mg/L		107	90 - 110	1	10
Sulfate	100	94.9		mg/L		95	90 - 110	1	10

Lab Sample ID: MRL 280-325836/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325836

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.37	J	mg/L		95	50 - 150
Fluoride	0.200	0.234	J	mg/L		117	50 - 150
Sulfate	2.50	2.52	J	mg/L		101	50 - 150

Lab Sample ID: MB 280-326040/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 326040

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	0.23	mg/L			05/19/16 11:24	1

Lab Sample ID: LCS 280-326040/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 326040

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	99.9		mg/L		100	90 - 110

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

Lab Sample ID: LCSD 280-326040/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 326040

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	100	99.9		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-326040/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 326040

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.50	2.60	J	mg/L		104	50 - 150

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

Lab Sample ID: MB 280-324028/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/05/16 11:11	1

Lab Sample ID: LCS 280-324028/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	491		mg/L		98	86 - 110

Lab Sample ID: LCSD 280-324028/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324028

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

Lab Sample ID: MB 280-324647/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324647

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/10/16 12:00	1

Lab Sample ID: LCS 280-324647/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324647

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	496		mg/L		99	86 - 110

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

Lab Sample ID: MB 280-324227/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/06/16 16:00	1

Lab Sample ID: LCS 280-324227/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 324227

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: 280-82715-4 DU — **Client Sample ID: W-3D**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 324227

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	1.2	J	ND		mg/L		NC	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-250112/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 253815 — **Prep Batch: 250112**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1023		0.0574	0.0581	1.00	0.0795	pCi/L	05/09/16 15:12	05/31/16 07:58	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.8*		*40 - 110*	*05/09/16 15:12*	*05/31/16 07:58*	*1*

Lab Sample ID: LCS 160-250112/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 253815 — **Prep Batch: 250112**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	15.79	*	1.50	1.00	0.0701	pCi/L	142	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-250117/1-A
Matrix: Water
Analysis Batch: 250950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 250117

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.6503		0.335	0.340	1.00	0.496	pCi/L	05/09/16 16:02	05/13/16 11:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.8*		*40 - 110*	*05/09/16 16:02*	*05/13/16 11:41*	*1*
Y Carrier	*82.2*		*40 - 110*	*05/09/16 16:02*	*05/13/16 11:41*	*1*

Lab Sample ID: LCS 160-250117/2-A
Matrix: Water
Analysis Batch: 250950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 250117

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.2	20.88		2.20	1.00	0.481	pCi/L	138	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.6*		*40 - 110*
Y Carrier	*80.4*		*40 - 110*

QC Association Summary

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

TestAmerica Job ID: 280-82715-1

Metals

Prep Batch: 229647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total Recoverable	Ground Water	3005A	
280-82715-2	W-3	Total Recoverable	Ground Water	3005A	
280-82715-3	W-5	Total Recoverable	Ground Water	3005A	
280-82715-4	W-3D	Total Recoverable	Ground Water	3005A	
280-82715-5	W-3EB	Total Recoverable	Ground Water	3005A	
LCS 240-229647/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-229647/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 231614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total Recoverable	Ground Water	6020A	229647
280-82715-1	MW-3	Total Recoverable	Ground Water	6020A	229647
280-82715-2	W-3	Total Recoverable	Ground Water	6020A	229647
280-82715-2	W-3	Total Recoverable	Ground Water	6020A	229647
280-82715-3	W-5	Total Recoverable	Ground Water	6020A	229647
280-82715-3	W-5	Total Recoverable	Ground Water	6020A	229647
280-82715-4	W-3D	Total Recoverable	Ground Water	6020A	229647
280-82715-4	W-3D	Total Recoverable	Ground Water	6020A	229647
280-82715-5	W-3EB	Total Recoverable	Ground Water	6020A	229647

Analysis Batch: 232005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-229647/2-A	Lab Control Sample	Total Recoverable	Water	6020A	229647
MB 240-229647/1-A	Method Blank	Total Recoverable	Water	6020A	229647

Prep Batch: 325165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	7470A	
280-82715-2	W-3	Total/NA	Ground Water	7470A	
280-82715-2 MS	W-3	Total/NA	Ground Water	7470A	
280-82715-2 MSD	W-3	Total/NA	Ground Water	7470A	
280-82715-3	W-5	Total/NA	Ground Water	7470A	
280-82715-4	W-3D	Total/NA	Ground Water	7470A	
280-82715-5	W-3EB	Total/NA	Ground Water	7470A	
LCS 280-325165/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 280-325165/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 280-325165/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 325636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	7470A	325165
280-82715-2	W-3	Total/NA	Ground Water	7470A	325165
280-82715-2 MS	W-3	Total/NA	Ground Water	7470A	325165
280-82715-2 MSD	W-3	Total/NA	Ground Water	7470A	325165
280-82715-3	W-5	Total/NA	Ground Water	7470A	325165
280-82715-4	W-3D	Total/NA	Ground Water	7470A	325165
280-82715-5	W-3EB	Total/NA	Ground Water	7470A	325165
LCS 280-325165/2-A	Lab Control Sample	Total/NA	Water	7470A	325165
LCSD 280-325165/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	325165
MB 280-325165/1-A	Method Blank	Total/NA	Water	7470A	325165

QC Association Summary

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

TestAmerica Job ID: 280-82715-1

General Chemistry

Analysis Batch: 323988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	9040B	
280-82715-2	W-3	Total/NA	Ground Water	9040B	
280-82715-3	W-5	Total/NA	Ground Water	9040B	
280-82715-4	W-3D	Total/NA	Ground Water	9040B	
LCS 280-323988/4	Lab Control Sample	Total/NA	Water	9040B	
LCSD 280-323988/5	Lab Control Sample Dup	Total/NA	Water	9040B	

Analysis Batch: 324028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-2	W-3	Total/NA	Ground Water	SM 2540C	
280-82715-4	W-3D	Total/NA	Ground Water	SM 2540C	
280-82715-5	W-3EB	Total/NA	Ground Water	SM 2540C	
LCS 280-324028/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-324028/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-324028/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 324227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	SM 2540D	
280-82715-2	W-3	Total/NA	Ground Water	SM 2540D	
280-82715-3	W-5	Total/NA	Ground Water	SM 2540D	
280-82715-4	W-3D	Total/NA	Ground Water	SM 2540D	
280-82715-4 DU	W-3D	Total/NA	Ground Water	SM 2540D	
280-82715-5	W-3EB	Total/NA	Ground Water	SM 2540D	
LCS 280-324227/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 280-324227/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 324647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	SM 2540C	
280-82715-3	W-5	Total/NA	Ground Water	SM 2540C	
LCS 280-324647/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-324647/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 325290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-5	W-3EB	Total/NA	Ground Water	9040B	
LCS 280-325290/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 325836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	9056A	
280-82715-2	W-3	Total/NA	Ground Water	9056A	
280-82715-2	W-3	Total/NA	Ground Water	9056A	
280-82715-3	W-5	Total/NA	Ground Water	9056A	
280-82715-4	W-3D	Total/NA	Ground Water	9056A	
280-82715-4	W-3D	Total/NA	Ground Water	9056A	
280-82715-5	W-3EB	Total/NA	Ground Water	9056A	
LCS 280-325836/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-325836/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-325836/6	Method Blank	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 325836 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 280-325836/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 326040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	9056A	
280-82715-3	W-5	Total/NA	Ground Water	9056A	
LCS 280-326040/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-326040/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 280-326040/6	Method Blank	Total/NA	Water	9056A	
MRL 280-326040/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 250112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	PrecSep-21	
280-82715-2	W-3	Total/NA	Ground Water	PrecSep-21	
280-82715-3	W-5	Total/NA	Ground Water	PrecSep-21	
280-82715-4	W-3D	Total/NA	Ground Water	PrecSep-21	
280-82715-5	W-3EB	Total/NA	Ground Water	PrecSep-21	
LCS 160-250112/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-250112/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 250117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-82715-1	MW-3	Total/NA	Ground Water	PrecSep_0	
280-82715-2	W-3	Total/NA	Ground Water	PrecSep_0	
280-82715-3	W-5	Total/NA	Ground Water	PrecSep_0	
280-82715-4	W-3D	Total/NA	Ground Water	PrecSep_0	
280-82715-5	W-3EB	Total/NA	Ground Water	PrecSep_0	
LCS 160-250117/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-250117/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

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

TestAmerica Job ID: 280-82715-1

Client Sample ID: MW-3

Date Collected: 05/03/16 14:15
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-1

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	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		5	50 mL	50 mL	231614	05/23/16 16:05	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	231614	05/23/16 18:35	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	325165	05/16/16 11:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	325636	05/16/16 19:42	CDH	TAL DEN
Total/NA	Analysis	9040B		1			323988	05/04/16 22:27	MAS	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	325836	05/19/16 01:58	AFB	TAL DEN
Total/NA	Analysis	9056A		500	5 mL	5 mL	326040	05/20/16 00:07	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	324647	05/10/16 12:00	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	324227	05/06/16 16:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			249.39 mL	1.0 g	250112	05/09/16 15:12	MCJ	TAL SL
Total/NA	Analysis	9315		1	249.39 mL		253815	05/31/16 07:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			249.39 mL	1.0 g	250117	05/09/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	249.39 mL		250944	05/13/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			254189	06/02/16 00:32	ALS	TAL SL

Client Sample ID: W-3

Date Collected: 05/03/16 11:10
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-2

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	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	231614	05/23/16 16:10	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	231614	05/23/16 18:39	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	325165	05/16/16 11:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	325636	05/16/16 19:44	CDH	TAL DEN
Total/NA	Analysis	9040B		1			323988	05/04/16 22:22	MAS	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	325836	05/19/16 02:38	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	325836	05/19/16 02:58	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	324028	05/05/16 11:11	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	324227	05/06/16 16:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.43 mL	1.0 g	250112	05/09/16 15:12	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.43 mL		253815	05/31/16 07:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.43 mL	1.0 g	250117	05/09/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.43 mL		250944	05/13/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			254189	06/02/16 00:32	ALS	TAL SL

Lab Chronicle

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

TestAmerica Job ID: 280-82715-1

Client Sample ID: W-5

Date Collected: 05/03/16 13:10
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-3

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	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	231614	05/23/16 16:14	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	231614	05/23/16 18:43	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	325165	05/16/16 11:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	325636	05/16/16 20:02	CDH	TAL DEN
Total/NA	Analysis	9040B		1			323988	05/04/16 22:36	MAS	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	325836	05/19/16 03:18	AFB	TAL DEN
Total/NA	Analysis	9056A		500	5 mL	5 mL	326040	05/20/16 00:25	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	324647	05/10/16 12:00	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	324227	05/06/16 16:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			250.26 mL	1.0 g	250112	05/09/16 15:12	MCJ	TAL SL
Total/NA	Analysis	9315		1	250.26 mL		253815	05/31/16 07:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			250.26 mL	1.0 g	250117	05/09/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	250.26 mL		250944	05/13/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			254189	06/02/16 00:32	ALS	TAL SL

Client Sample ID: W-3D

Date Collected: 05/03/16 11:10
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-4

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	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		20	50 mL	50 mL	231614	05/23/16 16:18	AS1	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	231614	05/23/16 18:47	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	325165	05/16/16 11:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	325636	05/16/16 20:04	CDH	TAL DEN
Total/NA	Analysis	9040B		1			323988	05/04/16 22:32	MAS	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	325836	05/19/16 03:58	AFB	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	325836	05/19/16 04:18	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	324028	05/05/16 11:11	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	324227	05/06/16 16:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			999.83 mL	1.0 g	250112	05/09/16 15:12	MCJ	TAL SL
Total/NA	Analysis	9315		1	999.83 mL		253815	05/31/16 07:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.83 mL	1.0 g	250117	05/09/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	999.83 mL		250944	05/13/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			254189	06/02/16 00:32	ALS	TAL SL

Lab Chronicle

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

TestAmerica Job ID: 280-82715-1

Client Sample ID: W-3EB

Date Collected: 05/03/16 11:55
Date Received: 05/04/16 12:15

Lab Sample ID: 280-82715-5

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	229647	05/10/16 11:51	AJC	TAL CAN
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	231614	05/23/16 16:22	AS1	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	325165	05/16/16 11:55	CDH	TAL DEN
Total/NA	Analysis	7470A		1	30 mL	50 mL	325636	05/16/16 20:06	CDH	TAL DEN
Total/NA	Analysis	9040B		1			325290	05/12/16 21:06	MAS	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	325836	05/19/16 04:37	AFB	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	324028	05/05/16 11:11	MNG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	324227	05/06/16 16:00	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1000.99 mL	1.0 g	250112	05/09/16 15:12	MCJ	TAL SL
Total/NA	Analysis	9315		1	1000.99 mL		253815	05/31/16 07:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.99 mL	1.0 g	250117	05/09/16 16:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	1000.99 mL		250944	05/13/16 11:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			254189	06/02/16 00:32	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 - Comanche

TestAmerica Job ID: 280-82715-1

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.

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

280-82715 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Sampler: Emily Muñoz
Lab PM: Kupper, Stephanie .
COC No:
Client Contact: Anna Lundin
Phone: 720 273 3436
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 - Comanche
Project #: 28014376
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		
~~MW-1~~				Water		N							
~~MW-2~~				Water		N							
MW-3	5/3/16	1415	G	Water		N	X	X	X	X	X	7	
~~MW-4~~				Water		N							
W-3	5/3/16	1110	G	Water		N	X	X	X	X	X	7	
~~W-4~~				Water		N							
W-5	5/3/16	1310	G	Water		N	X	X	X	X	X	7	
~~W-6~~				Water		N							
~~Field Duplicate~~ W-3D	5/3/16	1110	G	Water		N	X	X	X	X	X	7	
~~Equipment Blank~~ W-3EB	5/3/16	1155	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:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/4/16 1215	HDR	[signature]	5-4-16 1215	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: 6.2, 7.1-0.1 IR#5 Transferred by DW 5/4/16

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)
Client Contact: Shipping/Receiving
Company: TestAmerica Laboratories, Inc.
Address: 13715 Rider Trail North,
City: Earth City
State, Zip: MO, 63045
Phone: 314-298-8566(Tel) 314-298-8757(Fax)
Email:
Project Name: Xcel Energy GW CCR Monitoring - Comanche
Site: Xcel Energy CCR - Comanche Station

Sampler:
Phone:
Due Date Requested: 5/31/2016
TAT Requested (days):
PO #:
WO #:
Project #: 28014376
SSOW#:

Lab PM: Kupper, Stephanie K
E-Mail: stephanie.kupper@testamericainc.com
Carrier Tracking No(s):
COC No: 280-349693.1
Page: Page 1 of 1
Job #: 280-82715-1

Analysis Requested

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/ Ra226/RA228 Calc (3/3) - SUB	9315_Ra226/PrecSep_21 Ra226 (1/3) - SUB	9320_Ra228/PrecSep_0 Ra228 (2/3) - SUB	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-3 (280-82715-1)	5/3/16	14:15 Mountain		Water			X	X	X	1/2	
W-3 (280-82715-2)	5/3/16	11:10 Mountain		Water			X	X	X	1/2	
W-5 (280-82715-3)	5/3/16	13:10 Mountain		Water			X	X	X	1/2	
W-3D (280-82715-4)	5/3/16	11:10 Mountain		Water			X	X	X	1/2	
W-3EB (280-82715-5)	5/3/16	11:55 Mountain		Water			X	X	X	1/2	

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:

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
Meyna a Soto	5/5/16 1455		McG	050616 0910	

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/Cl.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: 280-349692.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-82715-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 5/26/2016			
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 - Comanche	Project #: 28014376			
Site: Xcel Energy CCR - Comanche 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:

S23

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) - SUB	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
MW-3 (280-82715-1)	5/3/16	14:15 Mountain		Water			X	1	Use Collision Cell
W-3 (280-82715-2)	5/3/16	11:10 Mountain		Water			X	1	Use Collision Cell
W-5 (280-82715-3)	5/3/16	13:10 Mountain		Water			X	1	Use Collision Cell
W-3D (280-82715-4)	5/3/16	11:10 Mountain		Water			X	1	Use Collision Cell
W-3EB (280-82715-5)	5/3/16	11:55 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
Margarita Soto	5/5/16 1455			5/7/16 1000	TA

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 5-7-16 Opened on 5-9-16

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 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): _____.

Ref: SOP NC-SC-0005, Sample Receiving
L:\QAQC\QA Department\QA TARDIS\Document Control\Work Instructions\WI-NC-099X-011816 Cooler Receipt Form.doc djl

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-82715-1

Login Number: 82715
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.	N/A	
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?	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: 280-82715-1

Login Number: 82715
List Number: 2
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 05/06/16 02:51 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	0.1
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 - Comanche

TestAmerica Job ID: 280-82715-1

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)
280-82715-1	MW-3	76.1
280-82715-2	W-3	87.5
280-82715-3	W-5	66.7
280-82715-4	W-3D	84.3
280-82715-5	W-3EB	88.0

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 160-250112/2-A	Lab Control Sample	84.6
MB 160-250112/1-A	Method Blank	77.8

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)
280-82715-1	MW-3	76.1	81.9
280-82715-2	W-3	87.5	82.2
280-82715-3	W-5	66.7	78.9
280-82715-4	W-3D	84.3	80.4
280-82715-5	W-3EB	88.0	77.4

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 160-250117/2-A	Lab Control Sample	84.6	80.4
MB 160-250117/1-A	Method Blank	77.8	82.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier