DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Golder Associates NC, Inc. on behalf of Red Rock Disposal, LLC

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: David Y. Reedy II, PG Phone: (336) 852-4903

E-mail: dreedy@golder.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Red Rock Landfill	7130 New Landfill Dr Holly Springs, NC 27540	92-28	.0500	October 26, 2015

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

David Y. Reedy II, PG — Senior Hydrogeologist — (336) 852-4903

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Signature — 12-29-15 Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1963 GEOLOGIST DAVID YATES REEDY, II 12-29-15

Golder Associates NC, Inc., 5B Oak Branch Drive, Greensboro, NC 27407

Facility Representative Address

C-2862

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

SECOND SEMI-ANNUAL 2015 SAMPLING EVENT

Red Rock Disposal, LLC C&D Landfill,

Permit No. 92-28

Wake County, North Carolina

Submitted To:

Red Rock Disposal, LLC
7130 New Landfill Drive
Holly Springs, NC 27540

Submitted By: Golder Associates NC, Inc.
5B Oak Branch Drive
Greensboro, NC 27407 USA

December 2015 **0739-603515.100**

A world of capabilities delivered locally

Golder Associates

December 29, 2015 0739-603515.100

Ms. Jaclynne Drummond
North Carolina Department of Environmental Quality
Division of Waste Management - Solid Waste Section
2090 US Highway 70
Swannanoa, NC 28778
828-296-4706

RE: WATER QUALITY MONITORING REPORT, SECOND SEMI-ANNUAL 2015 SAMPLING EVENT
RED ROCK DISPOSAL, LLC C&D LANDFILL, PERMIT NO. 92-28
WAKE COUNTY, NORTH CAROLINA

Dear Jackie:

On behalf of Red Rock Disposal, LLC, a subsidiary of Waste Industries USA, Inc., Golder Associates NC, Inc. is submitting the enclosed *Water Quality Monitoring Report,* which documents the results of the October 26, 2015, compliance monitoring event at the above-referenced facility. Red Rock Disposal, LLC monitors groundwater at this facility for parameters listed in Title 15A NCAC 13B.0544 of the North Carolina Solid Waste Management Rules (NCSWMR).

As presented, three NC Appendix I inorganic constituents (barium, chromium, and nickel) were detected at concentrations above their respective Solid Waste Section Limits (SWSLs) and applicable groundwater standards in samples from one or more downgradient monitoring wells during the October 2015 monitoring event. Statistical analyses were performed to determine the source of the above-standard exceedances. The concentrations of barium in the samples from MW-3 and MW-6T and chromium in the sample from MW-3 were determined to not represent statistically significant increases (SSIs) over background concentrations, therefore no further action is required at this time.

The concentration of nickel in the sample from MW-6T was determined to be statistically significant. Dissolved nickel was analyzed for sample MW-6T and was reported at a concentration below the NC 2L Standard; therefore, total nickel concentrations may be biased high by turbidity. The absence of leachate indicators (i.e., detections of volatile organic constituents or trend for field parameter indicators) for samples from MW-6T does not support a leachate release from the facility. Therefore, the concentration of nickel in the sample from MW-6T is considered suspect and no further action is warranted at this time.

Antimony and vanadium were detected at estimated concentrations below the SWSL, but above the Solid Waste Section Groundwater Protection Standards (GPS) in the samples from one or more downgradient wells. No further action is needed as concentrations are estimated.

Indicator parameters chloride, iron, manganese, and total dissolved solids (TDS) were detected at concentrations in samples from one or more downgradient monitoring wells above their respective NC 2L Standards during this event, as they have been during previous events. Statistical analyses were performed for chloride, iron, manganese, and TDS to evaluate the source of their exceedances. These concentrations are generally consistent with historical data and appear to be representative of naturally-occurring conditions based on concentrations in upgradient wells and other background data; therefore, no further action is required.

No NC Appendix I organic constituents were detected above laboratory detection limits in samples from downgradient monitoring wells during the October 2015 monitoring event. Additionally, both SW-2 and SW-3 were dry at the time of sampling and no samples were collected at these locations.

Based on these results, Red Rock Disposal, LLC will continue monitoring this facility in accordance with the requirements of the Detection Monitoring Program for Construction & Demolition Landfills as outlined in Title 15A NCAC 13B.0544. The next event is tentatively scheduled for March 2016. Should you have any questions or need further assistance, please contact the undersigned at 336-852-4903.

Sincerely,
GOLDER ASSOCIATES NC, INC.

FOR

David "Dusty" Y. Reedy II, PG
Senior Hydrogeologist

Rachel P. Kirkman, PG
Associate and Senior Consultant

Enclosure

C: Donald Plessinger, Landfill Manager, Red Rock Disposal, LLC, 7130 New Landfill Drive, Holly Springs, NC 27540, donald.plessinger@wasteindustries.com, 919-557-9583.
David Pepper, Waste Industries USA, Inc., 3301 Benson Drive, Suite 503, Raleigh, NC 27609, david.pepper@wasteindustries.com, 919-877-2235. (Electronic Copy)
Ben Habets, Waste Industries USA, Inc., 3301 Benson Drive, Suite 601, Raleigh, NC 27609, ben.habets@wasteindustries.com, 919-877-2228. (Electronic Copy)

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1.0 INTRODUCTION

This report summarizes the monitoring results from the October 26, 2015, groundwater and surface water sampling and analysis event at the Red Rock Disposal, LLC Construction & Demolition (C&D) Landfill (Red Rock Landfill) in Wake County, North Carolina (NC) in accordance with Title 15A of the North Carolina Administrative Code (NCAC) Subchapter 13B.0544. The Red Rock Landfill, an active C&D landfill, is owned and operated by Red Rock Disposal, LLC, a subsidiary of Waste Industries USA, Inc. (Waste Industries), under Permit No. 92-28 issued by the NC Department of Environment and Natural Resources (DENR).

1.1 Site Description and Background

The location of the facility is shown on the inlay on Drawing 1. Red Rock Landfill is located in southwestern Wake County, approximately 5 miles southwest of Holly Springs, NC. Access to the site is from New Landfill Drive, located off Rex Road to the north of the site.

There are three streams that traverse the site, which drain into the Shearon Harris Reservoir, located to the southwest of the site. One stream is the Jim Branch that flows southwesterly along the southeastern portion of the property boundary. A second stream is an unnamed intermittent tributary of the Jim Branch, which flows southeasterly across a portion of the northern property boundary. A third stream is another unnamed tributary of the Jim Branch that flows southerly across a portion of the southern property boundary. The locations of these surface water features are shown on Drawing 1.

Based on the topography as shown on Drawing 1, topographic surface elevations at the facility range from elevations of approximately 250 feet above mean sea level (AMSL) near the southeastern portion of the site near the Jim Branch, to 298 feet AMSL near the northeastern property boundary along Rex Road. The site is surrounded predominantly by wooded or agricultural properties, along with a nearby rock quarry. NC-designated game lands border portions of the site to the west. A Duke Energy Progress power line easement cuts through the southern portion of the site.

1.2 Compliance Monitoring History

Groundwater monitoring at the facility was initiated in October 2001 after approval of G.N. Richardson & Associates' Water Quality Monitoring Plan (WQMP) for Phase I, by the NC DENR, which included MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-10. Four additional wells (MW-11, MW-12, MW-13, and MW-14) were installed in August 2003. Compliance sampling of these four monitoring wells was initiated during the September 2008 sampling event, associated with construction activities for Phase 1C-2. Monitoring wells MW-1 and MW-9 were decommissioned during site construction activities in early 2008, and MW-13 was decommissioned in May 2011 during site construction activities.

The facility's current monitoring network is comprised of 8 monitoring wells (MW-2T, MW-3, MW-4, MW-5, MW-6T, MW-10, MW-11, and MW-14), which monitor the uppermost aquifer beneath the facility. Well MW-10 is the facility's upgradient background monitoring well. Monitoring wells MW-2T and MW-6T are replacement wells for MW-2 and MW-6, which were decommissioned. Wells MW-11 and MW-14 are located hydraulically upgradient with respect to Phase 1C-2. Well MW-12 remains for the collection of water levels only.

In addition to the groundwater monitoring points, the facility's monitoring network includes two downstream surface water sampling points, SW-2 and SW-3. Upstream surface water monitoring point SW-1 no longer exists due to site construction activities. Point SW-2 is located along an unnamed tributary of Jim Branch, which is downstream of the waste area. Point SW-3 is located along Jim Branch, downstream of the facility. These points are sampled in conjunction with the groundwater monitoring wells in accordance with the facility's permit and WQMP.

1.3 Hydrogeologic Setting

Geologically, the facility is located within the Deep River basin and Durham sub-basin of the Triassic Basin in the Piedmont Physiographic Province of NC (NCGS 1985). Generally, the Triassic Basin consists of Lower Mesozoic sedimentary and igneous rocks that filled rift basins. The Durham sub-basin contains conglomerates, agglomerates, sandstones, and mudstones. More specifically, all three Deep River sub-basins contain a middle clay-shale and mudstone interval approximately 50 to 400 meters thick, which is evident by the red shale present at the site, in addition to the presence of conglomerates and sandstones. The Deep River basin is bounded on the east by the Jonesboro fault system and is intruded by intersecting north and northwest-striking diabase dikes (Olsen, et al. 1991).

The uppermost groundwater beneath the facility is present in a shallow, unconfined aquifer comprised of saprolite, partially weathered rock (PWR), and conglomerate bedrock. Groundwater occurs at depths varying widely from approximately 2 feet below grade to more than 30 feet below grade across the site. Groundwater depths average approximately 3 to 10 feet below grade along the perimeter downgradient boundary, and approximately 5 to 25 feet below grade to the north along the upgradient northern perimeter boundary.

Depth-to-water measurements obtained during the October 2015 monitoring event and summarized in Table 1 were used to prepare a groundwater contour map presented on Drawing 1.

Surface water and groundwater at the site generally flows to the south and southeast toward Jim Branch, located along the southeastern portion of the site. The Jim Branch flows toward the southwest into the Shearon Harris Reservoir, located approximately ¾ of a mile from the site. Groundwater beneath the site flows in three distinguishable and vertically interconnected hydrogeologic units; saprolite, PWR, and

bedrock (GNR 2003). The groundwater contour map and interpreted flow directions are consistent with previously submitted interpretations for this facility.

Based on the October 2015 groundwater contour map, the hydraulic gradient in the shallow aquifer underlying the site as measured along the conceptual flow path shown on the contour map was calculated to be approximately 0.031 feet per foot. Groundwater velocities were calculated using a hydraulic conductivity of $7.45E^{-04}$ centimeters per second, which is the average of the hydraulic conductivities for each of the hydrogeologic units present at the facility (GNR 2003). The estimated effective porosity of the shallow aquifer is 0.10 (GNR 2003).

Using the above values, the estimated rate of groundwater flow for the uppermost aquifer beneath the facility was calculated using the following modified Darcy equation:

$$V_{gw} = Ki/n_e$$

where V_{gw} = average linear velocity (feet/year), K = hydraulic conductivity (feet/year), i = horizontal hydraulic gradient, and n_e = effective porosity.

The average estimated linear groundwater flow velocity under the waste management unit is approximately 238 feet/year, which is generally consistent with previous estimates (Table 2). The range of groundwater flow is expected to vary depending on the hydrogeologic unit in which it occurs. The linear velocity equation above makes the simplified assumptions of a homogeneous and isotropic aquifer. Therefore, this equation represents a likely average value for the uppermost aquifer and does not account for heterogeneous and/or anisotropic conditions that may be present in the uppermost aquifer at the facility.

2.0 FIELD PROGRAM, MONITORING RESULTS, AND DISCUSSION

Field activities conducted as part of the October 2015 sampling event are discussed in the following sections.

2.1 Visual Inspection Program

In order to detect a potential release at the earliest indication, the visual inspection program is used at the Red Rock C&D Landfill by the sampling personnel. This program includes physical indicators such as potential water table mounding beneath the waste management unit, physical examination of any stresses in biological communities, unexplained changes in soil characteristics, and any other change to the environment due to the waste management unit. During the October 2015 compliance monitoring event, no physical indicators of a potential release were observed in the waste management areas by the sampling personnel.

2.2 Well Network and Groundwater Elevation Measurements

The current groundwater monitoring network at the facility consists of 8 wells. Available monitoring well construction information for site monitoring wells is summarized on Table 3 and the well locations are shown on Drawing 1. The well locations were selected to yield groundwater samples representative of the conditions in the uppermost aquifer underlying the facility, and to monitor for potential releases from the landfill unit. Two downstream (SW-2 and SW-3) surface water monitoring points are also monitored.

Monitoring well MW-10 is the facility's background well, and is located hydraulically upgradient to sidegradient of the waste disposal area. Monitoring wells MW-2T, MW-3, MW-4, MW-5, and MW-6T are located downgradient of the waste disposal area and represent the facility's downgradient compliance wells. Monitoring wells MW-11 and MW-14 are compliance wells installed to monitor Phase 1C-2. The well locations yield groundwater samples representative of the conditions in the uppermost aquifer underlying the facility and monitor for potential releases from the landfill unit.

Depth-to-water measurements were recorded to the nearest 0.01 foot prior to and during groundwater purging and sampling activities. The respective groundwater level elevations for this event are presented in Table 1. The historical water level data are also shown on this table.

As presented, recent groundwater elevation data for the current monitoring well network indicate that the hydraulic head level in the uppermost aquifer beneath the facility is fairly consistent, with temporal variation from the long-term average limited to approximately 5 - 14 feet (plus or minus). However, several historical groundwater elevation readings appear to be anomalous and are not considered representative of site hydrogeologic conditions. The range in fluctuation (excluding anomalous data and decommissioned wells) appears to be greatest in MW-10, which is the upgradient well, located in a groundwater recharge area. The range in fluctuation in compliance wells MW-3, MW-4, MW-5, and MW-6T, which are located near groundwater discharge areas, is much less, presumably due to the stabilizing effect of the hydraulic discharge boundary.

2.3 October 2015 Monitoring Event

Personnel from Golder visited the facility on October 26, 2015, to purge and sample the eight monitoring wells and to sample surface water monitoring points SW-2 and SW-3. SW-2 and SW-3 were dry at the time of sampling, and therefore no sample was collected. Depth-to-water measurements were obtained from the network monitoring wells to the nearest 0.01 foot using an electronic water level indicator prior to purging the wells.

All monitoring wells were purged using dedicated bladder pumps. Low-flow micropurge procedures were used during the purging and sampling of all wells. Measurements of pH, specific conductivity, temperature, turbidity, dissolved oxygen, and oxidation reduction potential were recorded using field-calibrated instruments on approximately 3 to 5-minute intervals, depending on the purge rate. In general,

the purge rate for each well was matched to the yield of the monitoring well, as determined by continuously monitoring the depth-to-water, up to a maximum purge rate of 500 milliliters per minute. Purging was continued until stabilization was indicated by the water quality parameters.

Prior to sampling, the laboratory-supplied sample containers were prepared. Each sample container was labeled with the sample identification number, sampling personnel, date and time of sample collection, project name and number, and requested chemical analyses.

The required groundwater samples were collected directly from the bladder pump discharge lines in the labeled, laboratory-supplied, pre-preserved sample containers after purging was completed based on stabilization of all water quality parameters. After collection, the samples were placed in a cooler on ice, under chain-of-custody control. Copies of the sampling logs are presented in Appendix A. Included in each log is a description of the sampling equipment, sampling method and location, field observations, and water quality measurements.

The surface water samples are collected from the stream flow, by lowering a decontaminated polyethylene dipper into the stream flow with the opening facing away from the current to minimize sample-induced turbidity. The collected water is then poured from the dipper into the sample containers, taking care to prevent the overflow of the sample containers. Measurements of temperature, pH, specific conductivity, turbidity, dissolved oxygen, and oxygen reduction potential are measured directly from the stream and recorded during the collection of the surface water samples.

After collection, the surface water samples are placed in a cooler on ice, under chain-of-custody control. Copies of the sampling logs are presented as Appendix A. Included in each log is a description of the sampling equipment, sampling location, sampling method, field observations, and water-quality measurements.

2.4 Laboratory Analysis Program

The October 26, 2015, groundwater and surface water samples were submitted to Environmental Conservation Laboratories, Inc. (ENCO) of Cary, NC under chain-of-custody control for analysis. As presented, groundwater samples at the facility were analyzed for NC Appendix I constituents, the indicator parameters as specified in the Title 15A NCAC 13B.0544 of the Solid Waste Management Rules, and tetrahydrofuran. Surface water samples were also analyzed for the NC Appendix I constituents plus tetrahydrofuran. Groundwater and surface water samples were received at the laboratory on October 27, 2015, in good condition and properly preserved.

2.5 October 2015 Sampling Results

Analytical results and field parameters for the October 2015 groundwater samples are summarized in Tables 4 and 5 with available historical data. Historical results and field parameters for surface water

samples are summarized in Tables 6 and 7. The laboratory certificates-of-analysis, chain-of-custody form, and laboratory data reviews for the sampling event are included as Appendix B.

As presented, four NC Appendix I inorganic constituents (barium, chromium, nickel, and silver) were detected at concentrations above their respective Solid Waste Section Limits (SWSLs) in samples from one or more downgradient monitoring wells during the October 2015 monitoring event. Indicator metals, iron and manganese, were detected at concentrations above their respective SWSLs in samples from one or more downgradient wells during the October 2015 event. Indicator parameters chloride, TDS, and alkalinity were detected at concentrations above their respective SWSLs in samples from one or more downgradient wells during the event, as they have been during previous events. No NC Appendix I organic constituents were detected above their respective SWSLs in groundwater samples during the event. In general, results are consistent with historical data. Both SW-2 and SW-3 were dry at the time of sampling, therefore, no samples were collected during this event.

3.0 LABORATORY AND FIELD QA/QC

A field blank was collected by Golder personnel as part of the October 2015 groundwater sampling event. In addition to the field blank, a laboratory-prepared trip blank accompanied the volatile sample containers to and from the laboratory. ENCO analyzed the field blank for NC Appendix I constituents plus indicator metals and tetrahydrofuran and the trip blank for NC Appendix I volatile organic compounds and tetrahydrofuran. Reviews of the laboratory data were performed by Golder personnel (included in Appendix B). Method blanks are also included in the laboratory quality assurance and quality control (QA/QC) procedures. Based on Golder's review, no data qualification was necessary.

4.0 DATA EVALUATION

The results of the data evaluations are presented in the following sections.

4.1 North Carolina Groundwater and Surface Water Standard Comparisons

As presented, three NC Appendix I inorganic constituents were detected in samples from one or more downgradient wells at concentrations that exceeded their respective SWSLs and applicable groundwater standards during the October 2015 event. Barium was detected at concentrations that exceeded the NC 2L Standard in the samples from upgradient well MW-10 and downgradient wells MW-3 and MW-6T. Chromium was detected at a concentration that exceeded the NC 2L Standard in the sample from MW-3. Nickel was detected at a concentration that exceeded the NC 2L Standard in the sample from MW-6T. Dissolved nickel was analyzed for the sample from MW-6T and was reported at a concentration below the groundwater standard. Vanadium was detected in the samples from MW-3, MW-4, and MW-14 at estimated concentrations below the SWSL but above the Solid Waste Section (SWS) Groundwater Protection Standard (GPS) during this event. Antimony was also detected at an estimated concentration

below the SWSL, but above its GPS in the sample from MW-5. No further action is needed as concentrations of antimony and vanadium are estimated.

As presented in Table 4, four indicator parameters (chloride, iron, manganese, and TDS) were detected at concentrations above their respective NC 2L Standards during this event in samples from one or more downgradient wells. These concentrations are generally consistent with historical data and appear to be representative of naturally-occurring conditions based on concentrations in upgradient wells and other background data. As presented in Table 4, no NC Appendix I organic constituents were detected above applicable groundwater standards in samples from monitoring wells during the October 2015 sampling event.

4.2 Statistical Evaluations

As presented above, three NC Appendix I inorganic constituents (barium, chromium, and nickel) were detected above the respective SWSLs and groundwater standards in samples from one or more downgradient monitoring wells during this sampling event. To determine the source of these above-standard detections, the concentrations were statistically compared to background concentrations. The statistical worksheets and summary table are presented as Appendix C.

Based on these analyses, the concentrations of barium in samples from MW-3 and MW-6T and chromium in the sample from MW-3 were determined to not be statistically significant. The total and dissolved nickel concentrations in the sample from MW-6T were determined to be statistically significant over background concentrations. However, dissolved nickel was reported at a concentration below the NC 2L Standard. The absence of leachate indicators (i.e., detections of volatile organic constituents or trend for field parameter indicators) for samples from MW-6T does not support a leachate release from the facility. Therefore, the concentration of nickel in the sample from MW-6T is considered suspect and no further action is warranted at this time.

Indicator parameters, chloride, iron, manganese, and TDS were detected above the SWSLs and respective groundwater standards in samples from one or more downgradient monitoring wells during this sampling event. The concentrations were statistically compared to background concentrations and based on the statistical evaluation were determined to be representative of background concentrations.

5.0 SUMMARY

Based on the results summarized herein, Red Rock Disposal, LLC, is in compliance with respect to water quality monitoring requirements and will continue monitoring the uppermost aquifer beneath this facility in accordance with the requirements of the Detection Monitoring Program for C&D Landfills as outlined in Title 15A NCAC 13B.0544. The next sampling event is tentatively scheduled for March 2016.

6.0 REFERENCES

HGL (The Hutchinson Group, Ltd.), Murrysville, PA, various monitoring well, piezometer construction records and boring logs, July-October 2000.

GNR (G.N. Richardson & Associates, Inc.), Raleigh, NC, *Groundwater and Surface Water Monitoring Reports*, November 2001 through October 2006, and *Water Quality Monitoring Plans,* May 2001 and October 2003.

NCGS (North Carolina Geologic Survey), 1985. Geologic Map of North Carolina.

Olsen et al. (Olsen, Paul E., Froelich, Albert J., Daniels, David L., Smoot, Joseph P., Gore, Pamela J.W.), Rift Basins of Early Mesozoic Age, in Horton, J.W., Jr., and Zullo, V.A., eds., The Geology of the Carolinas: The University of Tennessee Press, 1991, pp. 142-170.

USGS (Heath, Ralph C.), Basic Ground-Water Hydrology, Water Supply Paper 2220, for U.S. Department of Interior and U.S.G.S., 1983.

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TABLES

TABLE 1

Summary of Historical Groundwater Elevation Data
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

	Monitoring Well																					
	MW-2T*		MW-3		MW-4		MW-5		MW-6T*		MW-7		MW-8		MW-10**		MW-11		MW-12		MW-14	
TOC Elevation (ft AMSL)	281.19		261.80		254.10		254.47		289.21		302.36		286.62		301.16		310.77		314.83		301.20	
Date	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)	Elevation (ft AMSL)	DTW (ft)
11/30/2000	NI	NI	248.38	13.42	241.87	12.23	251.28	3.19	NI	NI	288.67	13.69	258.15	28.47	283.86	17.30	NI	NI	NI	NI	NI	NI
1/10/2001	NI	NI	248.23	13.57	249.18	4.92	251.48	2.99	NI	NI	287.84	14.52	258.07	28.55	283.53	17.63	NI	NI	NI	NI	NI	NI
2/13/2001	NI	NI	248.66	13.14	251.48	2.62	251.87	2.60	NI	NI	289.39	12.97	264.94	21.68	283.28	17.88	NI	NI	NI	NI	NI	NI
4/9/2001	NI	NI	249.95	11.85	251.24	2.86	251.49	2.98	NI	NI	298.81	3.55	257.76	28.86	285.13	16.03	NI	NI	NI	NI	NI	NI
4/26/2001	NI	NI	249.57	12.23	250.10	4.00	251.76	2.71	NI	NI	294.38	7.98	257.67	28.95	284.56	16.60	NI	NI	NI	NI	NI	NI
6/11/2002	255.03	26.16	248.33	13.47	246.57	7.53	247.22	7.25	269.74	19.47	--	--	--	--	286.80	14.36	NI	NI	NI	NI	NI	NI
11/1/2002	254.99	26.20	248.35	13.45	251.61	2.49	251.85	2.62	270.41	18.80	--	--	--	--	285.63	15.53	NI	NI	NI	NI	NI	NI
3/6/2003	256.87	24.32	252.85	8.95	251.91	2.19	251.98	2.49	271.68	17.53	--	--	--	--	290.06	11.10	NI	NI	NI	NI	NI	NI
9/9/2003	256.21	24.98	250.19	11.61	251.36	2.74	251.19	3.28	275.07	14.14	--	--	--	--	287.74	13.42	280.77	30.00	299.71	15.12	291.03	10.17
9/23/2003	237.32	43.87	249.92	11.88	250.86	3.24	250.82	3.65	275.24	13.97	--	--	--	--	--	--	--	--	--	--	--	--
3/11/2004	257.22	23.97	252.61	9.19	251.73	2.37	251.81	2.66	277.64	11.57	--	--	--	--	290.45	10.71	--	--	--	--	--	--
9/23/2004	257.62	23.57	250.98	10.82	251.57	2.53	251.44	3.03	275.73	13.48	--	--	--	--	290.13	11.03	--	--	--	--	--	--
3/10/2005	257.31	23.88	252.19	9.61	251.88	2.22	251.99	2.48	275.37	13.84	--	--	--	--	290.88	10.28	--	--	--	--	--	--
9/22/2005	255.82	25.37	248.26	13.54	247.45	6.65	246.83	7.64	--	--	--	--	--	--	289.94	11.22	--	--	--	--	--	--
3/6/2006	256.17	25.02	250.29	11.51	250.61	3.49	250.59	3.88	274.96	14.25	--	--	--	--	291.63	9.53	--	--	--	--	--	--
9/19/2006	257.19	24.00	248.77	13.03	248.53	5.57	250.47	4.00	277.26	11.95	--	--	--	--	290.83	10.33	--	--	--	--	--	--
3/20/2007	266.28	14.91	251.80	10.00	251.30	2.80	251.05	3.42	275.79	13.42	--	--	--	--	293.25	7.91	289.81	20.96	300.53	14.30	290.12	11.08
9/27/2007	256.52	24.67	247.78	14.02	247.31	6.79	248.56	5.91	277.70	11.51	293.42	8.94	--	--	289.87	11.29	283.46	27.31	300.39	14.44	286.50	14.70
3/25/2008	255.94	25.25	249.68	12.12	251.79	2.31	252.27	2.20	274.91	14.30	298.75	3.61	266.67	19.95	290.19	10.97	288.16	22.61	295.82	19.01	285.98	15.22
9/29-30/2008	256.98	24.21	248.02	13.78	250.08	4.02	251.99	2.48	275.85	13.36	292.83	9.53	267.24	19.38	288.81	12.35	282.62	28.15	296.81	18.02	286.67	14.53
3/30-31/2009	256.60	24.59	251.61	10.19	251.74	2.36	252.04	2.43	275.29	13.92	301.86	0.50	266.52	20.10	292.66	8.50	287.02	23.75	297.31	17.52	290.13	11.07
9/29-30/2009	257.10	24.09	248.08	13.72	249.28	4.82	250.97	3.50	276.94	12.27	--	--	--	--	289.98	11.18	283.57	27.20	299.23	15.60	286.97	14.23
3/30-31/2010	257.12	24.07	251.50	10.30	251.54	2.56	251.89	2.58	275.62	13.59	300.57	1.79	268.15	18.47	294.24	6.92	290.05	20.72	301.74	13.09	290.48	10.72
9/29-30/2010	257.10	24.09	248.22	13.58	251.44	2.66	252.28	2.19	277.90	11.31	293.07	9.29	267.15	19.47	293.24	7.92	289.05	21.72	300.74	14.09	287.34	13.86
4/6-4/7/2011	255.19	26.00	248.70	13.10	251.28	2.82	251.72	2.75	275.31	13.90	290.51	11.85	267.01	19.61	289.45	11.71	290.04	20.73	299.02	15.81	287.45	13.75
9/28/2011	258.15	23.04	247.76	14.04	249.11	4.99	251.92	2.55	277.30	11.91	290.16	12.20	266.62	20.00	288.22	12.94	284.80	25.97	298.59	16.24	286.09	15.11
3/28/2012	257.68	23.51	250.72	11.08	251.48	2.62	251.98	2.49	276.30	12.91	296.79	5.57	265.57	21.05	291.30	9.86	290.36	20.41	298.51	16.32	288.34	12.86
9/26/2012	257.60	23.59	248.80	13.00	250.10	4.00	250.35	4.12	278.13	11.08	290.24	12.12	265.71	20.91	288.71	12.45	287.05	23.72	298.31	16.52	286.38	14.82
4/1/2013	255.48	25.71	249.48	12.32	251.45	2.65	251.82	2.65	277.43	11.78	289.71	12.65	264.71	21.91	289.81	11.35	291.05	19.72	297.51	17.32	285.31	15.89
9/25/2013	258.19	23.00	249.13	12.67	251.16	2.94	251.87	2.60	279.53	9.68	291.54	10.82	264.89	21.73	290.14	11.02	286.53	24.24	299.48	15.35	288.55	12.65
4/1/2014	257.99	23.20	253.44	8.36	251.51	2.59	252.22	2.25	279.23	9.98	299.76	2.60	264.99	21.63	294.26	6.90	291.53	19.24	303.71	11.12	289.60	11.60
9/29/2014	257.90	23.29	249.10	12.70	250.20	3.90	249.05	5.42	281.22	7.99	291.88	10.48	266.47	20.15	290.21	10.95	286.03	24.74	302.30	12.53	287.90	13.30
3/31/2015	258.21	22.98	253.21	8.59	251.60	2.50	252.16	2.31	280.71	8.50	299.85	2.51	265.67	20.95	294.53	6.63	291.19	19.58	303.58	11.25	289.59	11.61
10/26/2015	257.39	23.80	248.16	13.64	250.12	3.98	249.47	5.00	285.91	3.30	290.90	11.46	266.33	20.29	289.18	11.98	287.03	23.74	302.25	12.58	286.19	15.01
MEAN	*256.52*	*24.67*	*249.79*	*12.01*	*250.31*	*3.79*	*251.11*	*3.36*	*276.58*	*12.63*	*293.85*	*8.51*	*264.51*	*22.11*	*289.47*	*11.69*	*287.37*	*23.40*	*299.77*	*15.06*	*287.93*	*13.27*
MAXIMUM	*266.28*	*43.87*	*253.44*	*14.04*	*251.91*	*12.23*	*252.28*	*7.64*	*285.91*	*19.47*	*301.86*	*14.52*	*268.15*	*28.95*	*294.53*	*17.88*	*291.53*	*30.00*	*303.71*	*19.01*	*291.03*	*15.89*
MINIMUM	*237.32*	*14.91*	*247.76*	*8.36*	*241.87*	*2.19*	*246.83*	*2.19*	*269.74*	*3.30*	*287.84*	*0.50*	*257.67*	*18.47*	*283.28*	*6.63*	*280.77*	*19.24*	*295.82*	*11.12*	*285.31*	*10.17*

Notes:
1. ft AMSL = feet above mean sea level.
2. -- = not measured or no data
3. TOC = top of casing
4. NI = not installed
5. MW = monitoring well
6. TOC and Water Elevation Data for dates prior to March 2007 from historical G.N. Richardson & Associates, Inc. *Ground and Surface Water Monitoring Reports* .
7. *MW-2T and MW-6T are replacement well installations for MW-2 and MW-6, respectively.
8. **TOC Elevation for MW-10 is listed as both 296.35 feet AMSL in the Hutchinson Group, Ltd. data and 301.16 feet AMSL in the Richardson data from the same sampling periods. The latest TOC elevation is used for this table.
9. It appears that MW-2T,MW-6T,and MW-10 were re-surveyed by G.N. Richardson & Associates, Inc. The TOC data from the most recent reports are used in this table.
10. Water level data for MW-2T from 9/23/2003 and 3/20/2007 and for MW-4 from 11/3/2000 appear to be anomalous and were not included in the mean, maximum, and minimum groundwater calculations.
11. Wells MW-1 and MW-9 were decomissioned in 2008 during site construction activities.
12. The elevations for MW-2T are unchanged since the inner casing was replaced after well was damaged.
13. Approval was received from NCDENR on 3-3-11 to monitor MW-12 for water levels only and to decommission MW-13 (decommissioned on 5-2-11).

TABLE 2

Summary of Estimated Horizontal Flow Velocities
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

October 2015							
Gradient Calculation Segment	**Flow Direction**	**Gradient Segment Length (feet)**	**Gradient Segment Elevations (feet)**	**Horizontal Gradient, i (feet)**	**Effective Porosity, n_e**	**Hydraulic Conductivity, K (cm/sec)**	**Velocity, V_{gw} (feet/year)**
i_1	SE	490	300 / 280	0.0408	0.10	0.000745	314.69
i_2	SSE	1315	300 / 260	0.0304	0.10	0.000745	234.47
i_3	SSE	1886	290 / 250	0.0212	0.10	0.000745	163.50

Notes:

1. Horizontal velocities based on the modified Darcy equation $V_{gw} = Ki/n_e$.
2. Values for K and n_e were based on mean values for MW-1, MW-3, MW-5 and MW-10 and hydrogeologic data collected by G.N. Richardson & Associates, Inc. Values for n_e also based on typical effective porosities for similar hydrogeologic conditions as discussed in the 1983 U.S. Dept of Interior and U.S.G.S. publication *Basic Ground-Water Hydrology, Water-Supply Paper 2220,* by Ralph C. Heath.

TABLE 3

Summary of Well Construction Information

Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28

Wake County, North Carolina

Well Identification	Construction Date	Coordinates		Ground Surface Elevation (ft AMSL)	Measuring Point Elevation (ft AMSL)	Well Diameter (inches)	Well Depth (feet)	Screened Interval (ft bgs)	Screened Interval (ft AMSL)	Depth to Bedrock (ft bgs)	Geology of Screened Interval	Well Status
		Northing	Easting									
MW-2T	9/29/2001	673949.63	2029330.92	--	281.19	2	82	--	--	--	--	Active
MW-3	10/19/2000	673404.42	2029314.22	257.5	261.80	2	31.5	17-27	240.5-230.5	5.00	Bedrock	Active
MW-4	10/11/2000	673139.11	2030104.02	251.76	254.10	2	17	5-15	246.76-236.76	6.00	PWR/Bedrock	Active
MW-5	10/12/2000	673672.17	2030685.82	252.04	254.47	2	15.5	4-14	248.04-238.04	11.00	Saprolite	Active
MW-6T	10/29/2001	676625.91	2030732.10	287.38	289.21	2	45	35-45	252.38-242.38	10.00	Bedrock	Active
MW-7	10/17/2000	676615.29	2030029.53	300.14	302.36	2	20.5	8-18	292.14-282.14	10.30	PWR/Bedrock	Water Levels Only
MW-8	10/18/2000	676615.29	2030029.53	283.58	286.62	2	33.5	23-33	260.58-250.58	33.50	Saprolite	Water Levels Only
MW-10	10/18/2000	677194.05	2031353.05	--	301.16	2	34	11-31	--	17.00	Saprolite/PWR/Bedrock	Active
MW-11	8/12/2003	677194.05	2031353.05	308.17	310.77	2	50	40-50	268.17-258.17	12.00	Bedrock	Active
MW-12	8/11/2003	675723.77	2029012.40	312.04	314.83	2	28.5	17-27	295.04-285.04	8.00	Bedrock	Water Levels Only
MW-14	8/12/2003	674749.52	2028576.82	298.24	301.20	2	32	22-32	276.24-266.24	8.00	Bedrock	Active

Notes:

1. ft AMSL = feet above mean sea level
2. ft BGS = feet below ground surface
3. NA = not drilled to auger refusal
4. -- = no data available
5. PWR = partially weathered rock
6. Unless otherwise noted, well construction information given by G.N. Richardson & Associates, Inc. & The Hutchinson Group, Ltd. hydrogeologic data, including previous *Groundwater Monitoring Reports* and May 2001 and Oct 2003 *Water Quality Monitoring Plans.*
7. MW-2T & MW-6T are replacement wells for MW-2 and MW-6 and have been included as part of the monitoring well network since the April 2001 sampling event.
8. Well depths for MW-2T, MW-3, MW-4, MW-5, and MW-10 were based on Golder's March 2007 field measurements.
9. The elevation for the top of casing of MW-2T remains unchanged since the inner casing was replaced after well was damaged.
10. Approval was received from NCDENR on 3-3-11 to monitor MW-12 for water levels only and to decommission MW-13 (decommissioned on 5-2-11).
11. Northing and easting coordinates were taken based on locations as determined in AutoCAD.

TABLE 4

Summary of Groundwater Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituents/Parameters	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Upgradient Compliance Wells		Downgradient Compliance Wells									Blanks
					MW-1	MW-10	MW-2T[1]	MW-3	MW-4	MW-5	MW-6T[1]	MW-11	MW-12	MW-13	MW-14	
Antimony	ug/L	10/31/01	--	30	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
SWS GPS = 1 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EPA MCL = 6 ug/L	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	6	--	ND	**1.09 J**	ND	ND	0.60 J	ND	--	--	--	--	ND
	ug/L	09/28/07	--	6	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	6	--	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND
	ug/L	09/29/08	--	6	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	6	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	6	--	ND	ND	0.0950 J	0.132 J	0.0950 J	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	6	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	6	--	ND	ND	ND	ND	0.220 J	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	6	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	6	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	6	--	ND	0.404 J	0.390 J	ND	0.821 J	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	6	--	ND	ND	ND	ND	0.344 J	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	6	--	ND	ND	ND	ND	0.740 J	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	6	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	6	--	ND	ND	ND	ND	0.882 J	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.220	6	--	ND	0.401 B	ND	ND	1.27 B	ND	ND	--	--	ND	0.421 J
	ug/L	03/31/15	0.220	6	--	ND	0.388 J	ND	ND	0.646 J	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.220	6	--	ND	0.954 J	0.450 J	0.242 J	**2.94 J**	0.381 J	ND	--	--	ND	ND
Arsenic	ug/L	10/31/01	--	10	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 10 ug/L	ug/L	06/11/02	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL =10 ug/L	ug/L	11/01/02	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/19/06	--	10	--	ND	ND	ND	ND	ND	**17**	--	--	--	--	ND
	ug/L	03/21/07	--	10	--	ND	ND	ND	4.8 J	ND	ND	--	--	--	--	ND
	ug/L	09/28/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	2.7 J	ND	ND	ND	--	ND	ND	ND
	ug/L	09/29/08	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	10	--	2.89 J	4.61 J	6.02 J	ND	4.20 J	8.65 J	ND	5.06 J	ND	ND	ND
	ug/L	03/30/10	--	10	--	ND	ND	ND	3.21 J	3.04 J	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	**16.2**	ND	ND
	ug/L	04/06/11	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	3.35 J	ND
	ug/L	09/28/11	--	10	--	ND	ND	ND	6.37 B	ND	ND	3.13 B	--	--	ND	4.13 J
	ug/L	03/28/12	--	10	--	ND	ND	7.54 J	ND	ND	6.72 J	ND	--	--	ND	ND
	ug/L	09/26/12	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	3.89 J
	ug/L	04/01/13	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	8.05 J	ND	ND	ND	ND	6.11 J	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	5.40	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	6.80	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	6.80	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Barium	ug/L	10/31/01	--	500	**909**	--	--	**1650**	**922**	ND	--	--	--	--	--	ND
NC 2L = 700 ug/L	ug/L	06/11/02	--	500	ND	ND	646	**1547**	ND	ND	**837**	--	--	--	--	ND
EPA MCL = 2000 ug/L	ug/L	11/01/02	--	500	ND	ND	ND	**1733**	ND	ND	**787**	--	--	--	--	ND
	ug/L	03/06/03	--	500	ND	ND	535	**1939**	ND	ND	**936**	--	--	--	--	ND
	ug/L	09/23/03	--	500	**1046**	ND	ND	**2090**	ND	ND	**1066**	--	--	--	--	ND
	ug/L	03/11/04	--	500	**752**	**707**	ND	**1881**	ND	ND	**966**	--	--	--	--	ND
	ug/L	09/23/04	--	500	--	ND	ND	**1830**	ND	ND	**977**	--	--	--	--	ND
	ug/L	03/10/05	--	500	--	**872**	ND	**2129**	ND	ND	**1164**	--	--	--	--	ND
	ug/L	09/22/05	--	500	--	ND	ND	**1871**	ND	ND	**1018**	--	--	--	--	ND
	ug/L	03/06/06	--	500	--	590	ND	**1838**	ND	ND	**1458**	--	--	--	--	ND
	ug/L	09/19/06	--	500	--	ND	ND	**2090**	ND	ND	**1787**	--	--	--	--	ND
	ug/L	03/21/07	--	100	--	**901**	61.8 J	**2080**	24.7 J	226	**1700**	--	--	--	--	0.30 J
	ug/L	09/28/07	--	100	--	488	59.1 J	**1930**	286	238	**1800**	--	--	--	--	0.30 J
	ug/L	03/25/08	--	100	--	**710**	61.5 J	**2010**	37.6 J	91.0 J	**1470**	318	--	--	335	0.30 J
	ug/L	09/29/08	--	100	--	**1040**	42.6 J	**2090**	33.6 J	108	**1880**	25.3 J	**1010**	**1010**	75.9 J	ND
	ug/L	03/30/09	--	100	--	**999**	41.5 J	**1950**	32.5 J	67.0 J	**1950**	23.9 J	329	329	61.4 J	ND
	ug/L	09/29/09	--	100	--	**1100**	40.1 J	**1920**	46.4 J	107	**2180**	53.8 J	**858**	**858**	97.2 J	ND
	ug/L	03/30/10	--	100	--	**1120**	40.4 J	**1810**	31.3 J	151	**1880**	16.0 J	553	553	86.7 J	ND
	ug/L	09/29/10	--	100	--	**892**	30.4 J	**1770**	28.4 J	103	**1420**	13.4 J	561	561	57.2 J	ND
	ug/L	09/29/10	--	100	--	--	--	--	--	--	--	--	--	--	--	ND
	ug/L	04/06/11	--	100	--	**1080**	41.2 J	**2020**	37.4 J	186	**2040**	16.3 J	--	--	68.5 J	ND
	ug/L	09/28/11	--	100	--	**1410**	36.3 J	**2060**	33.2 J	137	**2230**	16.0 J	--	--	69.5 J	ND
	ug/L	03/28/12	--	100	--	**974**	39.7 J	**2100**	19.4 J	125	**2250**	15.4 J	--	--	70.7 J	ND
	ug/L	09/26/12	--	100	--	**1350**	38.0 J	**2080**	18.0 J	95.9 J	**2420**	14.9 J	--	--	66.6 J	ND
	ug/L	04/01/13	--	100	--	**1120**	41.8 J	**2030**	19.8 J	110	**2280**	15.1 J	--	--	76.8 J	1.16 J
	ug/L	09/25/13	--	100	--	**1180**	33.7 J	**2080**	17.4 J	92.3 J	**2390**	17.7 J	--	--	71.3 J	ND
	ug/L	04/01/14	--	100	--	**996**	38.7 J	**2120**	17.6 J	78.2 J	**2370**	16.4 J	--	--	72.6 J	1.29 J
	ug/L	09/29/14	1.00	100	--	**1410**	34.2 J	**2230**	18.4 J	137	**2540**	18.6 J	--	--	70.6 J	ND
(Dissolved)	ug/L	09/29/14	1.00	100	--	**--**	--	**2150**	--	--	**2410**	--	--	--	--	--
	ug/L	03/31/15	1.00	100	--	**1030**	46.6 J	**2380**	24.9 J	143	**2810**	16.3 J	--	--	78.0 J	ND
(Dissolved)	ug/L	03/31/15	1.00	100	--	**--**	--	**1970**	--	--	**2170**	--	--	--	--	--
	ug/L	10/26/15	1.00	100	--	**1180**	35.5 J	**2220**	19.3 J	107	**2440**	15.4 J	--	--	70.3 J	ND
Beryllium	ug/L	10/31/01	--	2	ND	--	--	ND	**4**	ND	--	--	--	--	--	ND
SWS GPS = 4 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EPA MCL = 4 ug/L	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/28/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND
	ug/L	09/29/08	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1 J
	ug/L	03/30/09	--	1	--	ND	ND	ND	0.12 J	ND	ND	ND	ND	0.20 J	ND	ND
	ug/L	09/29/09	--	1	--	ND	ND	ND	0.109 B	0.437 B	ND	ND	ND	0.464 B	ND	0.133 J
	ug/L	03/30/10	--	1	--	ND	ND	ND	0.137 J	0.291 J	ND	ND	ND	0.317 J	ND	ND
	ug/L	09/29/10	--	1	--	ND	ND	ND	0.216 J	0.640 J	ND	ND	ND	2.45	ND	ND
	ug/L	09/29/10	--	1	--	--	--	--	--	--	--	--	--	0.223 J	--	ND
	ug/L	04/06/11	--	1	--	ND	ND	ND	0.174 J	1.29	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	1	--	ND	ND	ND	0.127 J	0.212 J	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	1	--	ND	ND	ND	0.118 J	0.187 J	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	1	--	ND	ND	ND	ND	0.294 J	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	1	--	ND	ND	ND	0.101 J	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.100	1	--	ND	ND	ND	ND	0.434 J	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.100	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.100	1	--	ND	ND	ND	ND	0.281 J	ND	ND	--	--	ND	ND

TABLE 4

Summary of Groundwater Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituents/Parameters	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Upgradient Compliance Wells		Downgradient Compliance Wells									Blanks
					MW-1	MW-10	MW-2T[1]	MW-3	MW-4	MW-5	MW-6T[1]	MW-11	MW-12	MW-13	MW-14	
Cadmium	ug/L	10/31/01	--	1	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 2 ug/L	ug/L	06/11/02	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL = 5 ug/L	ug/L	11/01/02	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	1	ND	ND	**7**	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	1	--	ND	1	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	1	--	ND	**3**	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	1	--	ND	**7**	ND	ND	ND	2	--	--	--	--	ND
	ug/L	03/06/06	--	1	--	ND	1	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/19/06	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/21/07	--	1	--	ND	0.80 J	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/28/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND
	ug/L	09/29/08	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	1	--	0.17 J	0.29 J	ND	ND	0.22 J	ND	ND	ND	0.10 J	ND	ND
	ug/L	09/29/09	--	1	--	ND	ND	ND	0.585 J	0.658 J	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	1	--	ND	ND	ND	ND	0.760 J	ND	ND	0.431 J	ND	ND	ND
	ug/L	09/29/10	--	1	--	ND	ND	ND	ND	1.07	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	1	--	ND	ND	ND	1.41	0.410 J	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	1	--	ND	ND	ND	0.504 J	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	1	--	ND	0.462 J	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.360	1	--	ND	ND	ND	ND	0.948 J	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.360	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.360	1	--	ND	ND	ND	ND	0.536 J	ND	ND	--	--	ND	ND
Chromium	ug/L	10/31/01	--	10	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 10 ug/L	ug/L	06/11/02	--	10	ND	ND	**58**	ND	**29**	ND	ND	--	--	--	--	ND
EPA MCL = 100 ug/L	ug/L	11/01/02	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/19/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/21/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/28/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	3.8 J	ND	ND	2.8 J	--	6.5 J	ND	ND
	ug/L	09/29/08	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	3.1 J	ND	ND
	ug/L	03/30/09	--	10	--	ND	0.7 J	ND	1.2 J	ND	1.3 J	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	10	--	1.91 J	1.21 J	3.69 J	2.34 J	2.40 J	3.91 J	2.45 J	2.95 J	2.89 J	1.28 J	ND
	ug/L	03/30/10	--	10	--	ND	1.95 J	ND	2.05 J	1.68 J	1.52 J	ND	3.90 J	ND	1.08 J	ND
	ug/L	09/29/10	--	10	--	ND	ND	2.60 J	1.32 J	1.89 J	ND	ND	3.76 J	**11.5**	ND	ND
	ug/L	09/29/10	--	10	--	--	--	--	--	--	--	--	--	ND	--	ND
	ug/L	04/06/11	--	10	--	ND	ND	5.62 J	1.06 J	4.89 J	2.84 J	ND	--	--	ND	ND
	ug/L	09/28/11	--	10	--	1.19 J	1.28 J	**26.4**	1.62 J	7.72 J	4.70 J	ND	--	--	ND	ND
	ug/L	03/28/12	--	10	--	ND	ND	3.84 J	ND	**12.0**	2.48 J	ND	--	--	ND	ND
(Verification Event)	ug/L	05/23/12	--	10	--	--	--	--	--	6.49 J	--	--	--	--	--	ND
	ug/L	09/26/12	--	10	--	ND	ND	3.87 J	ND	5.11 J	3.09 J	ND	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	1.81 J	2.50 J	ND	4.17 J	1.71 J	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	9.01 J	ND	ND	ND	5.07 J	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	ND	2.43 J	ND	3.43 J	2.18 J	ND	--	--	ND	ND
	ug/L	09/29/14	1.40	10	--	ND	ND	2.88 J	ND	**90.9**	2.44 J	ND	--	--	ND	ND
(Dissolved)	ug/L	09/29/14	1.40	10	--	--	--	--	--	1.60	--	--	--	--	--	--
	ug/L	03/31/15	1.40	10	--	ND	ND	2.51 J	ND	6.80 J	3.17 J	ND	--	--	ND	ND
	ug/L	10/26/15	1.40	10	--	ND	ND	**13.5**	ND	5.52 J	2.96 J	ND	--	--	ND	ND
Cobalt	ug/L	10/31/01	--	10	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
SWS GPS = 1 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No EPA MCL	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	10	--	ND	ND	ND	3.1 J	**30.7**	ND	--	--	--	--	ND
	ug/L	09/28/07	--	10	--	ND	ND	ND	3.0 J	**21.1**	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	3.3 J	**2.9 J**	ND	**3.4 J**	--	**2.4 J**	**3.8 J**	ND
	ug/L	09/29/08	--	10	--	ND	ND	ND	7.1 J	**20.5**	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	10	--	ND	ND	ND	1.6 J	**1.1 J**	0.7 J	ND	0.8 J	**2.3 J**	ND	ND
	ug/L	09/29/09	--	10	--	ND	ND	ND	16.1	**9.24 J**	ND	ND	**2.15 J**	**2.03 J**	ND	ND
	ug/L	03/30/10	--	10	--	ND	ND	ND	ND	**2.43 J**	ND	ND	**1.47 J**	**2.33 J**	ND	ND
	ug/L	09/29/10	--	10	--	ND	ND	**1.15 J**	ND	**2.12 J**	ND	ND	**1.11 J**	**9.38 J**	ND	ND
	ug/L	04/06/11	--	10	--	ND	ND	ND	ND	**8.19 J**	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	10	--	ND	ND	ND	ND	**2.44 J**	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	10	--	ND	ND	ND	ND	**1.77 J**	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	1.10	10	--	ND	ND	ND	ND	**20.9**	ND	ND	--	--	ND	ND
	ug/L	03/31/15	1.10	10	--	ND	ND	ND	ND	**1.39 J**	ND	ND	--	--	ND	ND
	ug/L	10/26/15	1.10	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Copper	ug/L	10/31/01	--	200	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 1000 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EPA MCL = 1300 ug/L[#]	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	0.60 J
	ug/L	09/27/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	ND	ND	ND	52.4	--	ND	ND	0.60 J
	ug/L	09/29/08	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	2.50 J	ND	ND
	ug/L	03/30/09	--	10	--	ND	ND	ND	1.24 B	ND	ND	1.14 B	ND	1.38 B	ND	1.39 J
	ug/L	09/29/09	--	10	--	ND	ND	ND	3.00 J	ND	ND	4.19 J	ND	5.57 J	ND	ND
	ug/L	03/30/10	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	10	--	ND	ND	ND	ND	2.81 J	ND	ND	ND	8.76 J	ND	ND
	ug/L	04/06/11	--	10	--	ND	2.80 B	ND	2.02 B	3.37 B	ND	ND	--	--	ND	2.07 J
	ug/L	09/28/11	--	10	--	ND	ND	ND	3.29 J	4.44 J	ND	ND	--	--	1.65 J	ND
	ug/L	03/28/12	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	10	--	ND	ND	ND	2.19 J	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	3.19 J	ND	ND	3.25 J	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	1.60	10	--	ND	ND	ND	ND	4.54 J	ND	ND	--	--	ND	ND
	ug/L	03/31/15	1.60	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	1.60	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND

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Summary of Groundwater Monitoring Results
Detected Constituents
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Wake County, North Carolina

Detected Monitoring Constituents/Parameters	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Upgradient Compliance Wells		Downgradient Compliance Wells									Blanks
					MW-1	MW-10	MW-2T[1]	MW-3	MW-4	MW-5	MW-6T[1]	MW-11	MW-12	MW-13	MW-14	
Lead	ug/L	10/31/01	--	10	ND	--	--	ND	14	ND	--	--	--	--	--	ND
NC 2L = 15 ug/L	ug/L	06/11/02	--	10	ND	ND	ND	ND	**17**	ND	ND	--	--	--	--	ND
EPA MCL = 15 ug/L[#]	ug/L	11/01/02	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/19/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/21/07	--	10	--	ND	ND	2.4 B	ND	6.0 B	ND	--	--	--	--	2.7 J
	ug/L	09/28/07	--	10	--	ND	ND	ND	**15.9**	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	ND	ND	ND	**58.1**	--	4.6 J	**15.5**	ND
	ug/L	09/29/08	--	10	--	ND	ND	ND	2.3 J	ND	ND	ND	ND	5.9 J	ND	ND
	ug/L	03/30/09	--	10	--	2.6 J	ND	ND	1.9 J	3.0 J	2.2 J	ND	1.7 J	1.8 J	ND	ND
	ug/L	09/29/09	--	10	--	ND	ND	ND	2.74 J	ND	ND	3.66 J	ND	5.25 J	ND	ND
	ug/L	03/30/10	--	10	--	ND	**51.7**	ND	2.95 J	2.03 J	ND	ND	2.56 J	3.10 J	2.70 J	ND
	ug/L	09/29/10	--	10	--	ND	**35.3**	ND	ND	ND	ND	ND	3.07 J	**56.7**	ND	ND
	ug/L	09/29/10	--	10	--	--	--	--	--	--	--	--	--	ND	--	ND
	ug/L	04/06/11	--	10	--	ND	7.29 J	ND	ND	ND	ND	ND	--	--	2.09 J	ND
	ug/L	09/28/11	--	10	--	ND	**16.5**	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	10	--	ND	**18.4**	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	10	--	1.96 J	4.77 J	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	2.59 J	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	14.1	ND	2.30 J	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	11.8	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	2.10	10	--	ND	12.6	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	3.10	10	--	ND	10.5	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	3.10	10	--	ND	3.65 J	ND	ND	ND	ND	ND	--	--	ND	ND
Mercury	ug/L	10/31/01	--	0.5	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 1 ug/L	ug/L	06/11/02	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL = 2 ug/L	ug/L	11/01/02	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	1	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	0.5	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/06	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/19/06	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/21/07	--	0.2	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/27/07	--	0.2	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	0.2	--	ND	ND	ND	ND	ND	ND	0.16 J	--	--	0.59	ND
	ug/L	09/29/08	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.170	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.170	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.170	0.2	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Nickel	ug/L	10/31/01	--	50	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 100 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No EPA MCL	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	50	--	ND	ND	ND	ND	2.3 J	ND	--	--	--	--	ND
	ug/L	09/28/07	--	50	--	ND	ND	ND	ND	5.3 J	ND	--	--	--	--	ND
	ug/L	03/25/08	--	50	--	ND	2.9 J	ND	ND	ND	ND	ND	--	2.7 J	ND	ND
	ug/L	09/29/08	--	50	--	ND	1.9 J	ND	ND	ND	ND	ND	7.7 J	3.7 J	ND	ND
	ug/L	03/30/09	--	50	--	0.7 B	0.8 B	1.6 B	1.1 B	1.2 B	1.2 B	0.6 B	2.7 B	0.8 B	ND	0.6 J
	ug/L	09/29/09	--	50	--	2.10 J	ND	8.99 J	4.62 J	5.42 J	6.39 J	5.35 J	9.92 J	3.14 J	ND	ND
	ug/L	03/30/10	--	50	--	ND	2.88 J	2.42 J	ND	4.08 J	2.63 J	ND	8.42 J	ND	ND	ND
	ug/L	09/29/10	--	50	--	ND	ND	48.1 J	ND	8.26 J	ND	ND	5.18 J	ND	ND	ND
	ug/L	04/06/11	--	50	--	ND	ND	91.5	ND	32.2 J	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	50	--	ND	2.89 J	18.8 J	2.43 J	76.6	2.78 J	ND	--	--	ND	ND
	ug/L	03/28/12	--	50	--	ND	2.85 J	4.66 J	ND	7.90 J	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	50	--	ND	ND	3.37 J	ND	13.8 J	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	50	--	ND	ND	3.66 J	ND	3.06 J	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	50	--	8.60 J	ND	3.72 J	ND	5.12 J	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	50	--	ND	1.99 J	3.01 J	1.86 J	1.88 J	1.95 J	ND	--	--	ND	ND
	ug/L	09/29/14	1.80	50	--	ND	ND	3.07 J	ND	42.4 J	ND	ND	--	--	ND	ND
	ug/L	03/31/15	1.80	50	--	ND	ND	3.83 J	ND	5.21 J	2.67 J	ND	--	--	ND	ND
	ug/L	10/26/15	1.80	50	--	ND	ND	44.7 J	ND	5.65 J	**124**	ND	--	--	ND	ND
(Dissolved)	ug/L	10/26/15	1.80	50	--	--	--	--	--	--	68.0	--	--	--	--	ND
Selenium	ug/L	10/31/01	--	20	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L = 20 ug/L	ug/L	06/11/02	--	20	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL = 50 ug/L	ug/L	11/01/02	--	20	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	20	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	20	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	20	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	20	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	20	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	20	--	ND	ND	**22**	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/06	--	20	--	ND	ND	**22**	ND	ND	**23**	--	--	--	--	ND
	ug/L	09/19/06	--	20	--	ND	ND	**29**	ND	ND	**47**	--	--	--	--	ND
	ug/L	03/21/07	--	10	--	ND	ND	ND	3.2 B	ND	ND	--	--	--	--	2.5 J
	ug/L	09/28/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND
	ug/L	09/29/08	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	10	--	ND	ND	ND	2.87 J	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	10	--	2.83 (ND) B	ND	ND	ND	ND	ND	ND	--	--	ND	3.32 (ND) J
	ug/L	09/26/12	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	5.00	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	5.00	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.910	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.910	10	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND

TABLE 4

Summary of Groundwater Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituents/Parameters	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Upgradient Compliance Wells		Downgradient Compliance Wells									Blanks
					MW-1	MW-10	MW-2T[1]	MW-3	MW-4	MW-5	MW-6T[1]	MW-11	MW-12	MW-13	MW-14	
Silver	ug/L	10/31/01	--	10	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
NC 2L= 20 ug/L	ug/L	06/11/02	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL = 100 ug/L	ug/L	11/01/02	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/03	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/11/04	--	10	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/23/04	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/10/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/22/05	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/06/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/19/06	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/21/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/27/07	--	10	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	ND	ND	ND	ND	ND	ND	2.3 J	--	--	--	ND
	ug/L	09/29/08	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	10	--	1.3 J	1.5 J	3.6 J	ND	1.5 J	4.3 J	ND	1.4 J	ND	1.4 J	ND
	ug/L	09/29/09	--	10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	10	--	ND	ND	2.96 J	ND	2.27 J	5.62 J	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	10	--	ND	ND	2.17 J	ND	ND	4.10 J	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	10	--	ND	ND	1.92 J	ND	ND	7.15 J	ND	--	--	ND	ND
	ug/L	09/28/11	--	10	--	ND	5.83 J	ND	ND	ND	**54.5** (16.5)	10.6	--	--	ND	ND
	ug/L	03/28/12	--	10	--	ND	ND	2.80 J	ND	1.92 J	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	10	--	ND	ND	3.16 J	ND	ND	7.51 J	2.64 J	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	ND	ND	ND	ND	2.61 J	4.21 J	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	2.23 J	2.09 J	ND	ND	**30.5**	2.20 J	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	ND	2.20 J	2.05 J	ND	2.37 J	ND	--	--	ND	ND
	ug/L	09/29/14	1.90	10	--	ND	4.28 J	ND	ND	3.30 J	1.95 J	ND	--	--	**70.4**	ND
(Dissolved)	ug/L	09/29/14	1.90	10	--	--	--	--	--	--	--	--	--	--	ND	--
	ug/L	03/31/15	1.90	10	--	9.02 J	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	1.90	10	--	2.87 J	ND	11.9	ND	3.13 J	9.88 J	ND	--	--	2.70 J	ND
Thallium	ug/L	10/31/01	--	10	ND	--	--	ND	ND	ND	--	--	--	--	--	ND
SWS GPS = 0.28 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EPA MCL = 2 ug/L	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	5.5	--	ND	ND	ND	ND	0.132 J	ND	--	--	--	--	ND
	ug/L	09/28/07	--	5.5	--	0.042 B	0.043 B	0.045 B	0.101 B	0.072 B	ND	--	--	--	--	0.066 J
	ug/L	03/25/08	--	5.5	--	ND	ND	ND	0.046 J	0.066 J	ND	0.175 J	--	0.050 J	0.106 J	ND
	ug/L	09/29/08	--	5.5	--	ND	0.057 B	0.041 B	0.052 B	0.063 B	ND	0.042 B	ND	0.052 B	ND	0.062 J
	ug/L	03/30/09	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.125 J
	ug/L	03/30/10	--	5.5	--	ND	ND	ND	0.116 J	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	5.5	--	0.121 J	**0.371 J**	0.134 J	**0.357 J**	ND	ND	0.199 J	--	--	0.147 J	ND
	ug/L	09/29/14	0.110	5.5	--	0.148 B	0.966 B	0.404 B	1.18 B	ND	ND	0.260 B	--	--	0.227 B	0.253 J
	ug/L	03/31/15	0.110	5.5	--	ND	**0.297 J**	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.110	5.5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Vanadium	ug/L	10/31/01	--	40	ND	--	--	**50**	ND	ND	--	--	--	--	--	ND
SWS GPS = 0.3 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No EPA MCL	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	25	--	ND	**17.4 J**	**22.9 J**	ND	ND	ND	--	--	--	--	ND
	ug/L	09/28/07	--	25	--	ND	**3.2 J**	**29.6**	**23.2 J**	ND	ND	--	--	--	--	ND
	ug/L	03/25/08	--	25	--	ND	**3.6 J**	**25.5**	**1.7 J**	ND	ND	**72.9**	--	**3.9 J**	**31.8**	ND
	ug/L	09/29/08	--	25	--	ND	ND	**24.6 J**	ND	ND	ND	ND	ND	**5.7 J**	**8.1 J**	ND
	ug/L	03/30/09	--	25	--	ND	**2.3 J**	**41.3**	**3.4 J**	ND	ND	**0.8 J**	**0.8 J**	**2.2 J**	**9.5 J**	ND
	ug/L	09/29/09	--	25	--	ND	ND	**35.1**	**4.94 J**	ND	ND	**5.71 J**	**1.57 J**	**7.54 J**	**12.9 J**	ND
	ug/L	03/30/10	--	25	--	ND	ND	**30.3**	**3.60 J**	ND	ND	ND	**3.19 J**	**3.90 J**	**11.5 J**	ND
	ug/L	09/29/10	--	25	--	ND	ND	**23.3 J**	**4.85 J**	**2.47 J**	ND	ND	**1.70 J**	**59.9**	**9.73 J**	ND
	ug/L	09/29/10	--	25	--	--	--	--	--	--	--	--	--	ND	--	ND
	ug/L	04/06/11	--	25	--	ND	ND	**28.0**	**4.24 J**	ND	ND	ND	--	--	**11.1 J**	ND
	ug/L	09/28/11	--	25	--	ND	ND	**34.4**	**4.59 J**	ND	ND	ND	--	--	**10.3 J**	ND
	ug/L	03/28/12	--	25	--	ND	ND	**25.1**	**2.41 J**	ND	ND	ND	--	--	**10.3 J**	ND
	ug/L	09/26/12	--	25	--	ND	ND	**22.0 J**	**1.95 J**	ND	ND	ND	--	--	**9.75 J**	ND
	ug/L	04/01/13	--	25	--	ND	ND	**24.8 J**	**2.09 J**	ND	ND	ND	--	--	**9.99 J**	ND
	ug/L	09/25/13	--	25	--	ND	ND	**25.2**	**2.39 J**	ND	ND	ND	--	--	**9.72 J**	ND
	ug/L	04/01/14	--	25	--	ND	ND	**23.1 J**	**2.21 J**	ND	ND	ND	--	--	**9.33 J**	ND
	ug/L	09/29/14	1.40	25	--	ND	ND	**26.3**	**1.96 J**	**2.81 J**	ND	ND	--	--	**10.1 J**	ND
	ug/L	03/31/15	1.40	25	--	ND	ND	**25.5**	**1.50 J**	ND	ND	ND	--	--	**8.77 J**	ND
	ug/L	10/26/15	1.40	25	--	ND	ND	**21.9 J**	**2.85 J**	ND	ND	ND	--	--	**9.74 J**	ND
Zinc	ug/L	10/31/01	--	20	ND	--	--	ND	21	ND	--	--	--	--	--	ND
NC 2L = 1000 ug/L	ug/L	06/11/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EPA MCL = 5000 ug/L*	ug/L	11/01/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/11/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/23/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/22/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/06/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	09/19/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	ug/L	03/21/07	--	10	--	ND	3.1 B	5.9 J	4.5 B	49.8	ND	--	--	--	--	1.1 J
	ug/L	09/28/07	--	10	--	2.3 J	ND	4.8 J	41.4	17.6	54.3	--	--	--	--	ND
	ug/L	03/25/08	--	10	--	2.1 B	9.9 B	1.6 B	10.9 B	9.1 B	ND	78.6	--	23.5	58.6	2.8 J
	ug/L	09/29/08	--	10	--	ND	4.3 J	ND	9.3 J	9.7 J	5.6 J	ND	12.6	15.7	ND	ND
	ug/L	03/30/09	--	10	--	ND	3.8 J	7.0 J	9.2 J	ND	ND	ND	7.3 J	5.2 J	ND	ND
	ug/L	09/29/09	--	10	--	5.13 B	6.49 B	10.1 B	23.5	18.8 B	4.26 B	16.4 B	20.9 B	20.3 B	13.4 B	4.60 J
	ug/L	03/30/10	--	10	--	ND	11.1	6.52 J	6.87 J	4.92 J	ND	ND	23.7	16.5	13.5	ND
	ug/L	09/29/10	--	10	--	ND	4.47 J	10.2	8.62 J	5.64 J	ND	ND	14.1	52.8	8.48 J	ND
	ug/L	04/06/11	--	10	--	ND	7.32 J	6.32 J	5.17 J	9.91 J	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	10	--	ND	ND	13.6	12.3	17.5	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	10	--	ND	6.10 J	13.7	ND	5.76 J	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	10	--	ND	5.70 J	8.44 J	ND	7.55 J	4.44 J	ND	--	--	ND	ND
	ug/L	04/01/13	--	10	--	ND	8.82 J	8.34 J	ND	5.34 J	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	10	--	ND	ND	6.25 J	ND	5.48 J	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	10	--	ND	7.22 J	8.26 J	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	3.80	10	--	ND	ND	8.34 J	4.13 J	24.6	ND	ND	--	--	8.84 J	ND
	ug/L	03/31/15	3.80	10	--	ND	ND	11.3	ND	7.04 J	ND	ND	--	--	ND	ND
	ug/L	10/26/15	3.80	10	--	ND	ND	8.77 J	4.17 J	8.08 J	3.88 J	ND	--	--	ND	ND

TABLE 4

Summary of Groundwater Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituents/Parameters	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Upgradient Compliance Wells		Downgradient Compliance Wells									Blanks
					MW-1	MW-10	MW-2T[1]	MW-3	MW-4	MW-5	MW-6T[1]	MW-11	MW-12	MW-13	MW-14	
Iron	ug/L	03/21/07	--	300	--	20 J	26 J	ND	813	4820	ND	--	--	--	--	ND
NC 2L = 300 ug/L	ug/L	09/28/07	--	300	--	170 J	39 J	ND	21800	436	ND	--	--	--	--	--
EPA MCL = 300 ug/L*	ug/L	03/25/08	--	300	--	242 J	ND	ND	3470	162 J	ND	27900	--	2990	13200	ND
	ug/L	09/29/08	--	300	--	144 J	267 J	ND	8780	5390	480	575	1050	5020	141 J	ND
	ug/L	03/30/09	--	300	--	141 J	107 J	ND	2240	150 J	1030	574	367	1120	ND	ND
	ug/L	09/29/09	--	300	--	457	247 J	156 J	7100	1750	1510	2400	1420	4310	1230	23.4 J
	ug/L	03/30/10	--	300	--	79.7 J	644	104 J	2250	200 J	959	170 J	1060	1430	745	ND
	ug/L	09/29/10	--	300	--	23.0 J	196 J	220 J	2210	175 J	590	115 J	768	42100	80.1 J	ND
	ug/L	09/29/10	--	300	--	--	--	--	--	--	--	--	--	97.7 J	--	ND
	ug/L	04/06/11	--	300	--	27.9 J	113 J	211 J	2260	96.8 J	990	112 J	--	--	82.8 J	ND
	ug/L	09/28/11	--	300	--	36.4 J	363	1620	2290	116 J	1080	79.2 J	--	--	31.3 J	ND
	ug/L	03/28/12	--	300	--	34.7 J	94.1 J	292 J	742	117 J	1010	39.0 J	--	--	50.0 J	ND
	ug/L	09/26/12	--	300	--	30.0 J	107 J	1800	599	143 J	1110	70.6 J	--	--	25.5 J	ND
	ug/L	04/01/13	--	300	--	64.5 J	58.0 J	376	677	54.6 J	1020	41.7 J	--	--	51.4 J	ND
	ug/L	09/25/13	--	300	--	95.5 J	566	605	665	65.3 J	1020	72.2 J	--	--	30.1 J	ND
	ug/L	04/01/14	--	300	--	ND	87.8 J	264 J	735	65.0 J	980	58.4 J	--	--	44.6 J	ND
	ug/L	09/29/14	22.0	300	--	ND	636	690	761	2150	1040	92.0 J	--	--	1950	ND
	ug/L	03/31/15	22.0	300	--	126 J	519	360	770	233 J	1200	ND	--	--	69.3 J	ND
	ug/L	10/26/15	22.0	300	--	24.2 J	283 J	150 J	981	115 J	1090	59.1 J	--	--	276 J	ND
Manganese	ug/L	03/21/07	--	50	--	166	141	16.8 J	743	3540	1370	--	--	--	--	ND
NC 2L = 50 ug/L	ug/L	09/28/07	--	50	--	251	36.0 J	33.7 J	498	2040	1580	--	--	--	--	--
EPA MCL = 50 ug/L*	ug/L	03/25/08	--	50	--	508	11.6 J	ND	337	122	80.5	877	--	89.2	1620	ND
	ug/L	09/29/08	--	50	--	1050	146	ND	1390	1920	1170	125	1510	139	58.1	ND
	ug/L	03/30/09	--	50	--	215	115	ND	239	116	1640	108	390	81.7	3.6 J	ND
	ug/L	09/29/09	--	50	--	1130	185	6.27 J	2270	1350	1860	180	1070	145	121	ND
	ug/L	03/30/10	--	50	--	144	197	4.01 J	39.4 J	237	1430	74.2	553	92.4	229	ND
	ug/L	09/29/10	--	50	--	913	94.2	22.3 J	108	429	1090	72.9	480	468	29.5 J	1.12 J
	ug/L	09/29/10	--	50	--	--	--	--	--	--	--	--	--	68.9		ND
	ug/L	04/06/11	--	50	--	377	104	20.2 J	26.9 J	1190	1590	76.5	--	--	17.8 J	ND
	ug/L	09/28/11	--	50	--	1550	182	34.1 J	130	316	1710	72.4	--	--	13.3 J	ND
	ug/L	03/28/12	--	50	--	470	88.4	15.3 J	35.2 J	205	1650	37.2 J	--	--	14.7 J	ND
	ug/L	09/26/12	--	50	--	1430	81.1	55.8	44.0 J	103	1760	76.3	--	--	7.07 J	ND
	ug/L	04/01/13	--	50	--	255	110	32.2 J	11.9 J	57.9	1690	33.3 J	--	--	9.57 J	ND
	ug/L	09/25/13	--	50	--	1030	160	41.1 J	23.6 J	76.6	1670	99.1	--	--	7.31 J	ND
	ug/L	04/01/14	--	50	--	118	121	14.1 J	9.51 J	31.8 J	1730	30.2 J	--	--	10.2 J	ND
	ug/L	09/29/14	1.10	50	--	1530	180	18.1 J	23.0 J	2520	1770	98.4	--	--	42.2 J	ND
	ug/L	03/31/15	1.10	50	--	130	210	14.7 J	11.0 J	227	2050	9.72 J	--	--	3.97 J	ND
	ug/L	10/26/15	1.10	50	--	1130	57.6	14.1 J	58.8	280	1780	57.5	--	--	77.9	ND
Acetone	ug/L	03/21/07	--	100	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
NC 2L = 6000 ug/L	ug/L	09/28/07	--	100	--	ND	2.8 B	ND	ND	ND	ND	--	--	--	--	5.2 J
No EPA MCL	ug/L	03/25/08	--	100	--	ND	ND	ND	3.0 J	3.2 J	ND	ND	--	ND	ND	ND
	ug/L	09/29/08	--	100	--	2.7 B	2.8 B	ND	ND	ND	4.4 B	ND	4.7 B	4.9 B	ND	3.5 J
	ug/L	03/30/09	--	100	--	ND	ND	ND	ND	ND	ND	4.2 J	ND	ND	ND	ND
	ug/L	09/29/09	--	100	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	100	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	100	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	1.2	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	1.2	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	1.2	100	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Chloroform	ug/L	03/21/07	--	5	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
NC2L = 70 ug/L	ug/L	09/27/07	--	5	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL = 80 ug/L	ug/L	03/25/08	--	5	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/29/08	--	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	5	--	ND	ND	ND	ND	ND	ND	ND	0.57 J	ND	ND	ND
	ug/L	09/29/09	--	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.18	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.18	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.18	5	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Chloromethane	ug/L	03/21/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
NC 2L = 3 ug/L	ug/L	09/27/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
No EPA MCL	ug/L	03/25/08	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/29/08	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/10	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	1	--	0.58 B	ND	ND	ND	ND	0.57 B	ND	0.50 B	ND	ND	0.44 J
	ug/L	04/06/11	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.13	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.13	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.13	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Toluene	ug/L	03/21/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
NC2L = 600 ug/L	ug/L	09/27/07	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
EPA MCL = 1000 ug/L	ug/L	03/25/08	--	1	--	ND	ND	ND	ND	ND	ND	--	--	--	--	ND
	ug/L	09/29/08	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	03/30/09	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/09	--	1	--	0.63 J	ND	0.51 J	ND	ND	0.81 J	0.94 J	0.56 J	ND	0.45 J	ND
	ug/L	03/30/10	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	09/29/10	--	1	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	04/06/11	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/28/11	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/28/12	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.14	1	--	ND	ND	0.45 J	ND	ND	ND	ND	--	--	ND	ND
	ug/L	03/31/15	0.14	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.14	1	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND

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Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituents/Parameters	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Upgradient Compliance Wells		Downgradient Compliance Wells									Blanks
					MW-1	MW-10	MW-2T(1)	MW-3	MW-4	MW-5	MW-6T(1)	MW-11	MW-12	MW-13	MW-14	
Tetrahydrofuran	ug/L	04/06/11	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
No NC 2L	ug/L	09/28/11	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
No EPA MCL	ug/L	03/28/12	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/26/12	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	04/01/13	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/25/13	--	--	--	ND	ND	ND	ND	2.4	ND	ND	--	--	ND	ND
	ug/L	04/01/14	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	09/29/14	0.80	--	--	ND	ND	ND	ND	10	ND	ND	--	--	ND	1.7
	ug/L	03/31/15	0.80	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
	ug/L	10/26/15	0.80		--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Chloride	mg/L	03/21/07	--	--	--	**1000**	**1500**	**2100**	15	**290**	**2000**	--	--	--	--	ND
NC2L = 250 mg/L	mg/L	09/28/07	--	--	--	170	**430**	**1600**	14	**210**	**1700**	--	--	--	--	0.53 J
EPA MCL = 250 mg/L*	mg/L	03/25/08	--	--	--	230	**490**	**1500**	3.5 J	**330**	**1600**	7.9	--	2.2 J	18	ND
	mg/L	09/29/08	--	--	--	**320**	**530**	**1700**	4.0 J	**170**	**1700**	11	**1500**	10	20	ND
	mg/L	03/30/09	--	--	--	ND	**460**	**1600**	6.5	**400**	**1800**	9.4	**500**	5.2	16	ND
	mg/L	09/29/09	--	--	--	**330**	**490**	**1500**	7.1	**390**	**1900**	10	**1300**	9.5	21	ND
	mg/L	03/30/10	--	--	--	**480**	**510**	**1600**	6.4	**960**	**1900**	11	**880**	13	21	ND
	mg/L	09/29/10	--	--	--	**310**	**450**	**1600**	7.3	**360**	**1900**	11	**840**	25	20	ND
	mg/L	04/06/11	--	--	--	**340**	**470**	**1500**	5.4 B	**660**	**1900**	11	--	--	22	1.9
	mg/L	09/28/11	--	--	--	**460**	**490**	**1500**	5.5 B	**570**	**1900**	10	--	--	24	1.6 J
	mg/L	03/28/12	--	--	--	**330**	**520**	**1600**	5.8 B	**770**	**2100**	11	--	--	28	1.2
	mg/L	09/26/12	--	--	--	**480**	**500**	**1500**	6.4 B	**900**	**2100**	11	--	--	30	1.5
	mg/L	04/01/13	--	--	--	**330**	**480**	**1600**	6.9 B	**820**	**1900**	11	--	--	36	1.6
	mg/L	09/25/13	--	--	--	**420**	**510**	**1700**	6.2	**1400**	**2100**	11	--	--	37	ND
	mg/L	04/01/14	--	--	--	**440**	**500**	**1600**	5.0	**1500**	**2100**	11	--	--	35	ND
	mg/L	09/29/14	110	--	--	**460**	**490**	**1700**	5.6	**1200**	**2100**	11	--	--	30	ND
	mg/L	03/31/15	87	--	--	**430**	**440**	**1600**	5.1	**940**	**2100**	11	--	--	37	ND
	mg/L	10/26/15	87	--	--	**360**	**480**	**1700**	5.5	**730**	**2300**	9.9	--	--	30	ND
Total Dissolved Solids	mg/L	03/21/07	--	--	--	860	**1100**	**3400**	64	590	**3100**	--	--	--	--	ND
NC2L = 1000 mg/L	mg/L	09/28/07	--	--	--	490	**1200**	**3100**	**1400**	480	**3200**	--	--	--	--	--
No EPA MCL	mg/L	03/25/08	--	--	--	620	**1200**	**3400**	120	830	**3400**	510	--	94	340	ND
	mg/L	09/29/08	--	--	--	850	**1300**	**3400**	100	450	**3500**	380	**2900**	180	330	ND
	mg/L	03/30/09	--	--	--	910	**1200**	**3300**	90	930	**3700**	290	**1000**	54	260	ND
	mg/L	09/29/09	--	--	--	930	**1300**	**3300**	150	930	**3900**	360	**2600**	200	340	ND
	mg/L	03/30/10	--	--	--	**1200**	**1300**	**3500**	160	**2100**	**4000**	350	**1800**	150	320	ND
	mg/L	09/29/10	--	--	--	850	**1300**	**3500**	140	920	**4000**	340	**1800**	930	330	ND
	mg/L	04/06/11	--	--	--	870	**1200**	**3300**	120	**1600**	**4100**	320	--	--	310	ND
	mg/L	09/28/11	--	--	--	**1200**	**1200**	**3300**	120	**1300**	**4000**	320	--	--	300	ND
	mg/L	03/28/12	--	--	--	890	**1200**	**3200**	82	**1600**	**3900**	340	--	--	360	ND
	mg/L	09/26/12	--	--	--	**1100**	**1200**	**3100**	28	**1900**	**4300**	350	--	--	340	ND
	mg/L	04/01/13	--	--	--	**1100**	**1200**	**3300**	66	**1800**	**4200**	320	--	--	360	ND
	mg/L	09/25/13	--	--	--	**1000**	**1200**	**3300**	74	**2800**	**4700**	320	--	--	350	ND
	mg/L	04/01/14	--	--	--	**1200**	**1200**	**3600**	74	**3000**	**4300**	340	--	--	320	ND
	mg/L	09/29/14	10	--	--	**1100**	**1200**	**3400**	86	**2800**	**4300**	340	--	--	340	ND
	mg/L	03/31/15	10	--	--	**1100**	**1200**	**3600**	120	**2100**	**4500**	350	--	--	360	ND
	mg/L	10/26/15	10	--	--	890	**1200**	**3600**	88	**1600**	**4900**	320	--	--	320	ND
Sulfate	mg/L	03/21/07	--	--	--	15	38	7.3 B	10	45	9.7	--	--	--	--	1.7 J
NC2L = 250 mg/L	mg/L	09/28/07	--	250	--	13 J	40 J	32 J	8.0 J	58 J	25 J	--	--	--	--	--
No EPA MCL	mg/L	03/25/08	--	250	--	12 J	35 J	7.2 J	8.7 J	86 J	11 J	ND	--	15 J	12 J	ND
	mg/L	09/29/08	--	250	--	11 J	53 J	6.0 J	6.3 J	52 J	10 J	2.4 J	9.2 J	16 J	12 J	ND
	mg/L	03/30/09	--	250	--	14 J	43 J	5.9 J	8.1 J	58 J	10 J	2.6 J	16 J	15 J	12 J	ND
	mg/L	09/29/09	--	250	--	11 J	46 J	5.5 J	8.2 J	59 J	11 J	2.5 J	11 J	16 J	12 J	ND
	mg/L	03/30/10	--	250	--	16 J	45 J	5.0 J	7.4 J	86 J	13 J	2.7 J	20 J	18 J	12 J	ND
	mg/L	09/29/10	--	250	--	11 J	48 J	4.7 J	6.2 J	36 J	15 J	2.5 J	18 J	12 J	12 J	ND
	mg/L	04/06/11	--	250	--	9.9 J	51 J	4.7 J	7.0 J	140 J	16 J	3.4 J	--	--	12 J	ND
	mg/L	09/28/11	--	250	--	9.3 J	56 J	4.3 J	5.0 J	84 J	16 J	2.9 J	--	--	13 J	ND
	mg/L	03/28/12	--	250	--	12 J	58 J	4.1 J	6.9 J	90 J	16 J	3.8 J	--	--	13 J	ND
	mg/L	09/26/12	--	250	--	9.1 J	5.3 J	4.1 J	6.2 J	93 J	11 J	4.6 J	--	--	12 J	ND
	mg/L	04/01/13	--	250	--	13 J	51 J	4.2 J	8.4 J	110 J	18 J	5.1 J	--	--	12 J	ND
	mg/L	09/25/13	--	250	--	11 J	56 J	3.9 B	7.9 J	110 J	12 J	7.7 J	--	--	12 J	1.5 J
	mg/L	04/01/14	--	250	--	14 J	50 J	4.2 J	9.8 J	110 J	11 J	13 J	--	--	11 J	ND
	ug/L	09/29/14	2.9	250	--	9.5 J	53 J	4.9 J	9.4 J	95 J	12 J	13 J	--	--	12 J	ND
	mg/L	03/31/15	2.9	250	--	16 J	56 J	5.2 J	11 J	88 J	15 J	12 J	--	--	12 J	ND
	mg/L	10/26/15	2.9	250	--	12 J	44 J	4.6 J	9.3 J	87 J	17 J	13 J	--	--	11 J	ND
Total Alkalinity	mg/L	03/21/07	--	--	--	120	320	270	31	22	310	--	--	--	--	ND
No NC 2L	mg/L	09/28/07	--	--	--	180	340	350	ND	15	320	--	--	--	--	--
No EPA MCL	mg/L	03/25/08	--	--	--	190	240	250	24	86	210	240	--	10 J	130	ND
	mg/L	09/29/08	--	--	--	140	240	230	40	25	220	240	78	17	130	ND
	mg/L	03/30/09	--	--	--	220	230	220	41	120	220	200	40	ND	110	ND
	mg/L	09/29/09	--	--	--	160	210	220	38	57	230	200	68	24	110	ND
	mg/L	03/30/10	--	--	--	290	210	220	32	140	220	210	36	13 J	110	ND
	mg/L	09/29/10	--	--	--	250	310	330	37	34	330	300	45	ND	220	ND
	mg/L	04/06/11	--	--	--	210	290	330	29	49	340	290	--	--	220	ND
	mg/L	09/28/11	--	--	--	270	320	310	32	73	320	280	--	--	220	ND
	mg/L	03/28/12	--	--	--	310	300	310	25	84	350	290	--	--	240	ND
	mg/L	09/26/12	--	--	--	270	290	310	38	140	350	300	--	--	230	ND
	mg/L	04/01/13	--	--	--	340	300	300	21	89	320	290	--	--	220	ND
	mg/L	09/25/13	--	--	--	290	310	310	24	240	340	280	--	--	230	ND
	mg/L	04/01/14	--	--	--	350	260	330	36	230	310	210	--	--	210	ND
	mg/L	09/29/14	70	--	--	260	330	370	34	270	370	300	--	--	240	ND
	mg/L	03/31/15	70	--	--	400	320	350	33	170	400	310	--	--	250	ND
	mg/L	10/26/15	70	--	--	260	300	330	38	100	380	290	--	--	220	ND

Notes:
mg/L = milligrams per liter
ug/L = micrograms per liter
ND = Not detected at the stated reporting limit
J = Estimated value
-- = no data
= EPA Action Level
* = EPA Secondary MCL
Blanks = field, trip, and method blanks
Bolded = Concentrations above the current NC 2L Groundwater Standards or Solid Waste Section Groundwater Protection Standards (SWS GPS) have been bolded.
Shaded = Concentrations above the current EPA Maximum Contaminant Level (MCL) have been shaded.
SWS Reporting Limit = NCPQL or lab-specific reporting limit prior to 2007 and NCSWSL starting on 01/18/07

1) MW-2T & MW-6T are replacement wells for MW-2 and MW-6 and have been included as part of the monitoring well network following the April 2001 sampling event.
2) MW-2T, MW-3, MW-4, MW-5, MW-6T and MW-10 have comprised the current monitoring well network since the Sept. 2004 event.
3) MW-10 is the facility's background well.
4) MW-1 was removed from the site for cell construction and was decomissioned following the March 2004 sampling event according to G.N. Richardson & Associates, Inc. WQMP Oct. 2003
5) Non-compliance (pre-waste) data from upgradient wells MW-11, MW-12 and MW-14 were collected in March 2008 to supplement the background data pool for statistical analysis.
6) Monitoring wells MW-12 and MW-13 were not sampled beginning with the April 2011 event per NCDENR approval to decommission MW-13 and collect water levels only for MW-12.
7) Re-analyses results are reported in parentheses.
8) The following dilutions were noted for the April 2015 event: Chloride: MW-2T(x10), MW-3(x20), MW-5(x10), MW-6T(x25), MW-10(x5)
Alkalinity: MW-2T(x5), MW-3(x3), MW-6T(x4), MW-10(x4), MW-11(x3), MW-14(x2)

TABLE 5

Summary of Field Parameters from Monitoring Wells
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring	Reporting	Sample	Upgradient		Downgradient Compliance Wells						
Constituents/Parameters	Units	Date	MW-1	MW-10	MW-2T	MW-3	MW-4	MW-5	MW-6T	MW-11	MW-14
pH (field)	S.U.	10/31/01	--	--	--	--	--	--	--	--	--
	S.U.	06/11/02	7.00	7.00	6.30	6.80	5.50	5.80	7.10	--	--
	S.U.	11/01/02	7.30	6.90	7.10	7.10	5.20	5.00	7.40	--	--
	S.U.	03/06/03	7.50	5.90	6.90	7.00	5.40	5.10	7.30	--	--
	S.U.	09/23/03	6.70	6.10	7.40	6.90	5.20	4.50	7.30	--	--
	S.U.	03/11/04	6.60	6.70	7.00	6.70	5.30	4.70	7.40	--	--
	S.U.	09/23/04	--	6.60	7.20	6.80	5.80	5.30	7.20	--	--
	S.U.	03/10/05	--	6.40	7.30	6.90	6.00	5.60	7.20	--	--
	S.U.	09/22/05	--	6.60	7.60	7.00	5.90	6.70	7.20	--	--
	S.U.	03/06/06	--	6.60	7.60	6.80	5.50	5.30	7.00	--	--
	S.U.	09/19/06	--	6.70	7.40	7.00	5.90	5.10	7.10	--	--
	S.U.	03/21/07	--	5.63	7.08	7.24	6.95	7.83	6.86	--	--
	S.U.	09/28/07	--	6.18	7.15	7.14	6.43	7.50	6.92	--	--
	S.U.	03/25/08	--	6.75	7.62	7.19	5.70	6.43	7.51	8.25	9.08
	S.U.	09/29/08	--	6.63	7.30	6.89	5.55	5.50	7.11	7.26	6.77
	S.U.	03/30/09	--	6.57	7.38	7.03	5.74	6.51	6.93	7.25	7.02
	S.U.	09/29/09	--	6.77	7.16	6.65	5.15	5.55	6.98	6.92	6.75
	S.U.	03/30/10	--	6.40	7.17	6.73	5.53	6.26	6.83	7.23	6.61
	S.U.	09/29/10	--	6.70	7.16	7.01	10.37	7.03	6.86	7.08	6.96
	S.U.	04/06/11	--	6.66	6.84	6.88	5.42	5.74	6.60	7.35	6.83
	S.U.	09/28/11	--	6.65	7.19	6.98	5.38	6.45	7.02	7.35	7.07
	S.U.	03/28/12	--	6.55	7.02	7.00	5.15	6.09	6.77	7.45	6.94
(Verification Event)	S.U.	05/23/12	--	--	--	--	--	6.28	--	--	--
	S.U.	09/26/12	--	6.75	7.52	7.21	5.19	6.50	7.01	7.66	6.90
	S.U.	04/01/13	--	6.65	6.91	7.10	5.70	6.53	6.83	7.50	7.07
	S.U.	09/25/13	--	6.75	7.23	6.95	5.61	6.51	6.85	7.56	7.05
	S.U.	04/01/14	--	6.37	6.93	6.75	5.69	6.37	6.59	7.39	7.00
	S.U.	09/29/14	--	6.16	7.09	6.73	5.80	6.43	6.93	7.04	6.57
	S.U.	03/31/15	--	6.64	7.32	7.04	6.01	6.37	6.86	7.77	7.02
	S.U.	10/26/15	--	6.69	6.93	6.89	5.30	6.02	6.72	7.42	6.84
Specific Conductance	uS/cm	10/31/01	--	--	--	--	--	--	--	--	--
(lab prior to 9/19/06 event)	uS/cm	06/11/02	2300	620	2200	4300	270	810	3700	--	--
	uS/cm	11/01/02	2000	796	1820	4000	114	254	4000	--	--
	uS/cm	03/06/03	2240	253	1804	5170	141	458	3770	--	--
	uS/cm	09/23/03	4059	622	1692	3088	141	247	3015	--	--
	uS/cm	03/11/04	5078	1464	2250	5310	208	944	4050	--	--
	uS/cm	09/23/04	--	995	2410	5220	124	525	4050	--	--
	uS/cm	03/10/05	--	1382	1876	4073	184	938	3091	--	--
	uS/cm	09/22/05	--	997	1968	4040	190	2860	3850	--	--
	uS/cm	03/06/06	--	1170	1963	4610	140	894	4150	--	--
	uS/cm	09/19/06	--	1378	2170	4850	158	698	4700	--	--
	uS/cm	03/21/07	--	1870	2470	6480	101	1320	6320	--	--
	uS/cm	09/28/07	--	1080	2260	5760	175	1060	6080	--	--
	uS/cm	03/25/08	--	1191	2313	5786	113	1703	5892	652	552
	uS/cm	09/29/08	--	1700	2380	5450	129	920	5590	556	462
	uS/cm	03/30/09	--	1950	2301	5369	146	1826	6126	557	473
	uS/cm	09/29/09	--	1760	1989	4445	132	1451	6767	490	432
	uS/cm	03/30/10	--	2284	2407	5599	122	3649	6633	580	531
	uS/cm	09/29/10	--	1666	2227	5229	142	1761	6238	607	564
	uS/cm	04/06/11	--	1696	2392	5602	115	2763	6716	580	533
	uS/cm	09/28/11	--	2020	2401	5404	101	4829	6644	564	538
	uS/cm	03/28/12	--	1455	2283	4757	91	2378	6275	525	486
(Verification Event)	uS/cm	05/23/12	--	--	--	--	--	4844	--	--	--
	uS/cm	09/26/12	--	1793	2148	4802	109	5341	6897	512	498
	uS/cm	04/01/13	--	1669	2031	4624	87	2463	5981	498	492
	uS/cm	09/25/13	--	2030	2460	5630	114	5590	7400	590	600
	uS/cm	04/01/14	--	2273	2535	6014	142	5334	7594	668	86
	uS/cm	09/29/14	--	2102	2484	5776	190	5904	7507	648	623
	uS/cm	03/31/15	--	1931	2311	5462	117	2560	6890	553	552
	uS/cm	10/26/15	--	1792	2139	5452	75.4	2496	7049	560.1	540.9
Temperature	Celsius	10/31/01	--	--	--	--	--	--	--	--	--
(lab prior to 9/19/06 event)	Celsius	06/11/02	17.0	16.0	16.0	15.0	16.0	15.0	19.0	--	--
	Celsius	11/01/02	16.0	17.0	17.0	17.0	15.0	15.0	17.0	--	--
	Celsius	03/06/03	16.0	12.0	16.0	13.0	12.0	11.0	16.0	--	--
	Celsius	09/23/03	22.0	19.0	17.0	19.0	21.0	20.0	20.0	--	--
	Celsius	03/11/04	12.0	13.0	16.0	12.0	11.0	10.0	14.0	--	--
	Celsius	09/23/04	--	19.0	18.0	19.0	20.0	20.0	21.0	--	--
	Celsius	03/10/05	--	12.0	16.0	12.0	9.0	10.0	13.0	--	--
	Celsius	09/22/05	--	20.0	20.0	19.0	20.0	20.0	22.0	--	--
	Celsius	03/06/06	--	14.0	17.0	14.0	13.0	13.0	15.0	--	--
	Celsius	09/19/06	--	19.0	18.0	19.0	19.0	21.0	20.0	--	--
	Celsius	03/21/07	--	12.8	15.9	13.2	11.9	11.2	12.7	--	--
	Celsius	09/28/07	--	21.98	21.32	20.78	20.61	22.75	26.35	--	--
	Celsius	03/25/08	--	14.64	17.46	13.42	12.30	12.14	16.00	16.06	14.76
	Celsius	09/29/08	--	18.30	19.84	17.88	19.18	20.38	21.48	20.60	19.91
	Celsius	03/30/09	--	15.41	16.99	14.13	10.85	10.89	16.73	15.64	15.57
	Celsius	09/29/09	--	16.92	16.69	15.82	18.90	19.31	22.71	20.81	18.08
	Celsius	03/30/10	--	16.46	15.89	14.05	14.70	13.32	18.05	14.24	16.38
	Celsius	09/29/10	--	17.37	18.19	18.66	20.65	20.00	18.70	17.45	17.92
	Celsius	04/06/11	--	14.67	17.24	16.85	13.54	12.63	14.99	17.21	15.40
	Celsius	09/28/11	--	18.17	20.98	18.99	19.91	19.73	19.71	18.97	18.77
	Celsius	03/28/12	--	14.85	18.91	15.44	15.12	14.27	17.95	17.62	16.05
(Verification Event)	Celsius	05/23/12	--	--	--	--	--	16.50	--	--	--
	Celsius	09/26/12	--	17.96	19.55	18.34	20.06	19.54	22.62	19.18	18.62
	Celsius	04/01/13	--	14.87	18.10	16.11	12.86	12.75	16.87	17.03	15.62
	Celsius	09/25/13	--	17.1	18.6	17.6	18.7	18.5	18.9	17.6	17.3
	Celsius	04/01/14	--	14.1	18.0	15.7	12.9	12.2	16.8	17.9	16.4
	Celsius	09/29/14	--	17.5	18.6	17.3	18.3	18.3	18.7	17.9	17.3
	Celsius	03/31/15	--	12.8	17.0	13.9	12.7	11.38	15.9	16.2	14.1
	Celsius	10/26/15	--	16.5	17.2	16.5	17.0	17.0	17.4	16.8	16.5

TABLE 5

Summary of Field Parameters from Monitoring Wells
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring	Reporting	Sample	Upgradient		Downgradient Compliance Wells						
Constituents/Parameters	Units	Date	MW-1	MW-10	MW-2T	MW-3	MW-4	MW-5	MW-6T	MW-11	MW-14
Turbidity (field)	NTU	03/21/07	--	124	135	106	154	342	97	--	--
	NTU	09/28/07	--	0	0	0	>1000	0	189	--	--
	NTU	03/25/08	--	10.1	9.02	1.31	49.8	5.55	1.46	>1000	>1000
	NTU	09/29/08	--	6.21	62.2	5.09	50.5	12.6	3.6	26.7	6.86
	NTU	03/30/09	--	5.74	11.4	2.92	35.5	8.32	1.18	28.8	1.20
	NTU	09/29/09	--	36.5	14.4	32.7	98.1	20.1	57.2	139	92.0
	NTU	03/30/10	--	2.94	26.9	2.30	46.3	2.53	3.92	7.75	33.6
	NTU	09/29/10	--	1.84	4.50	0	58.8	3.58	3.91	8.65	2.20
	NTU	04/06/11	--	0.49	1.78	4.24	41.5	3.08	0.98	1.76	1.61
	NTU	09/28/11	--	3.37	7.98	44.5	61.5	3.34	10.7	8.95	6.99
	NTU	03/28/12	--	7.99	4.66	4.63	15.1	0.88	1.71	1.26	1.75
	NTU	05/23/12	--	--	--	--	--	10.2	--	--	--
	NTU	09/26/12	--	1.25	1.92	20.8	16.0	6.18	2.03	3.04	1.63
	NTU	04/01/13	--	2.70	1.43	8.87	15.2	1.09	1.32	1.65	2.03
	NTU	09/25/13	--	5.46	4.61	10.3	18.1	3.33	8.79	5.65	3.81
	NTU	04/01/14	--	1.79	2.04	5.19	17.5	1.42	0.98	2.24	1.99
	NTU	09/29/14	--	0.46	2.27	7.31	12.2	24.9	1.70	1.14	14.4
	NTU	03/31/15	--	2.98	1.34	1.66	8.74	3.51	0.60	0.62	0.63
	NTU	10/26/15	--	0.56	0.85	1.09	15.6	1.16	2.62	0.87	5.26
ORP (field)	mV	03/21/07	--	--	--	--	--	--	--	--	--
	mV	09/28/07	--	--	--	--	--	--	--	--	--
	mV	03/25/08	--	73.8	72	145.2	164.4	152.4	97.2	--	--
	mV	09/29/08	--	85	-178	84	10	50	-5	-240	78
	mV	03/30/09	--	124.9	-27.0	132.9	182.1	140.3	-30.1	-77.7	94.4
	mV	09/29/09	--	17.6	-14.2	62.0	44.1	28.3	-81.9	-92.7	53.1
	mV	03/30/10	--	149.5	-69.5	138.6	119.5	86.2	-84.2	-89.3	64.2
	mV	09/29/10	--	83	-33.8	-323.1	-335.1	-288.3	-38.8	-48.4	49.5
	mV	04/06/11	--	82.6	-4.0	81.0	170.3	147.3	0.5	-23.7	87.6
	mV	09/28/11	--	31.4	-63.9	28.6	139.3	51.7	-79.2	-127.9	15.6
	mV	03/28/12	--	111.7	-72.7	57.1	97.7	73.2	-27.7	-156.6	-36.5
(Verification Event)	mV	05/23/12	--	--	--	--	--	31.1	--	--	--
	mV	09/26/12	--	119.9	-95.5	-87.3	-40.1	-55.2	-100.0	-160.7	-29.7
	mV	04/01/13	--	39.2	-37.4	7.5	59.4	8.0	-48.3	-85.3	5.1
	mV	09/25/13	--	137.2	-89.3	102.4	184.2	164.0	-18.1	-89.1	74.5
	mV	04/01/14	--	152.6	-140.2	81.3	115.8	84.2	-55.7	-118.8	82.7
	mV	09/29/14	--	114.5	-114.0	61.1	176.4	143.6	-50.4	-78.9	88.3
	mV	03/31/15	--	135.8	-16.6	89.9	101.2	103.9	39.1	93.1	95.5
	mV	10/26/15	--	86.4	-32.5	37.0	188.1	87.0	-34.2	-90.7	23.5
Dissolved Oxygen (field)	mg/L	03/21/07	--	--	--	--	--	--	--	--	--
	mg/L	09/28/07	--	--	--	--	--	--	--	--	--
	mg/L	03/25/08	--	0.79	7.24	8.32	1.99	3.09	4.62	--	--
	mg/L	09/29/08	--	0.89	0.69	6.03	3.12	1.10	1.02	0.62	4.45
	mg/L	03/30/09	--	0.71	1.22	4.89	2.79	2.60	0.59	0.56	4.09
	mg/L	09/29/09	--	1.87	1.70	2.18	1.53	1.60	2.57	1.35	4.01
	mg/L	03/30/10	--	1.39	0.84	4.00	2.09	2.72	2.07	0.99	4.03
	mg/L	09/29/10	--	0.60	0.39	1.90	0.75	3.03	1.13	0.22	4.18
	mg/L	04/06/11	--	1.62	0.75	5.35	2.79	3.62	1.77	0.47	4.37
	mg/L	09/28/11	--	2.08	0.67	1.52	0.86	2.13	4.38	1.12	3.09
	mg/L	03/28/12	--	1.00	0.32	3.71	0.79	2.61	1.30	0.21	3.85
(Verification Event)	mg/L	05/23/12	--	--	--	--	--	1.56	--	--	--
	mg/L	09/26/12	--	0.57	0.21	0.36	0.76	1.04	2.13	0.21	2.64
	mg/L	04/01/13	--	1.01	0.48	4.73	3.15	4.73	2.27	1.50	3.66
	mg/L	09/25/13	--	0.68	0.28	1.57	0.71	0.86	0.83	0.26	2.82
	mg/L	04/01/14	--	0.78	0.32	3.04	3.74	4.11	1.24	1.55	7.86
	mg/L	09/29/14	--	1.57	0.67	1.76	1.76	1.11	1.46	0.68	4.66
	mg/L	03/31/15	--	2.01	0.96	3.62	4.45	3.50	2.30	2.72	3.55
	mg/L	10/26/15	--	0.45	2.15	3.83	3.85	2.29	0.91	0.25	3.75

Notes:
S.U. = Standard Units
NTU = Nephelometric Turbidity Units
uS/cm = microsiemens per centimeter
mg/L = milligrams per liter
mV = Millivolts
-- = no data

1) MW-2T, MW-3, MW-4, MW-5, MW-6T and MW-10 have comprised the current monitoring well network since the Sept. 2004 event.
2) MW-10 is the facility's background well.
3) MW-1 was removed from the site for cell construction and was decomissioned following the March 2004 sampling event according to G.N. Richardson & Associates, Inc. WQMP Oct. 2003.
4) Non-compliance (pre-waste) data from upgradient wells MW-11, MW-12 and MW-14 were collected in March 2008 to supplement the background data pool for statistical analysis.
5) Monitoring wells MW-12 and MW-13 were not sampled beginning with the April 2011 event per NCDENR approval to decommission MW-13 and collect water levels only for MW-12.
6) The pH value for the sample from MW-4 for the September 2010 event is considered suspect based on historical data.

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Antimony	ug/L	03/21/07	--	6	ND		ND		ND	
No SW Standard	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	6	ND		ND		ND	
	ug/L	09/29/08	--	6	ND		ND		ND	
	ug/L	03/30/09	--	6	0.70	J	ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	6	ND		ND		ND	
	ug/L	09/29/10	--	6	ND		ND		ND	
	ug/L	04/06/11	--	6	0.266	J	ND		ND	
	ug/L	09/28/11	--	6	ND		ND		ND	
	ug/L	03/28/12	--	6	0.225	J	ND		ND	
	ug/L	09/26/12	--	6	ND		Dry		ND	
	ug/L	04/01/13	--	6	ND		ND		ND	
	ug/L	09/25/13	--	6	ND		ND		ND	
	ug/L	04/01/14	--	6	ND		ND		ND	
	ug/L	09/29/14	0.220	6	0.541	B	Dry		0.421	J
	ug/L	03/31/15	0.220	6	ND		ND		ND	
	ug/L	10/26/15	0.220	6	Dry		Dry		ND	
Arsenic	ug/L	06/11/02	--	10	ND		ND		ND	
SW Standard = 50 ug/L	ug/L	11/01/02	--	10	ND		ND		ND	
	ug/L	03/06/03	--	10	ND		ND		ND	
	ug/L	09/23/03	--	10	ND		ND		ND	
	ug/L	03/11/04	--	10	ND		ND		ND	
	ug/L	09/23/04	--	10	ND		ND		ND	
	ug/L	03/10/05	--	10	ND		ND		ND	
	ug/L	09/22/05	--	10	ND		ND		ND	
	ug/L	03/06/06	--	10	ND		ND		ND	
	ug/L	09/19/06	--	10	ND		ND		ND	
	ug/L	03/21/07	--	10	ND		ND		ND	
	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	ND		2.4	J	ND	
	ug/L	09/29/08	--	10	ND		ND		ND	
	ug/L	03/30/09	--	10	ND		ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	4.16	J	ND		ND	
	ug/L	09/29/10	--	10	3.21	J	ND		ND	
	ug/L	04/06/11	--	10	ND		ND		ND	
	ug/L	09/28/11	--	10	7.58	B	4.80	B	4.13	J
	ug/L	03/28/12	--	10	2.81	J	ND		ND	
	ug/L	09/26/12	--	10	7.28	B	Dry		3.89	J
	ug/L	04/01/13	--	10	ND		ND		ND	
	ug/L	09/25/13	--	10	5.93	J	8.47	J	ND	
	ug/L	04/01/14	--	10	ND		ND		ND	
	ug/L	09/29/14	5.40	10	14.3		Dry		ND	
	ug/L	03/31/15	6.80	10	ND		ND		ND	
	ug/L	10/26/15	6.80	10	Dry		Dry		ND	

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Barium	ug/L	06/11/02	--	500	ND		ND		ND	
No SW Standard	ug/L	11/01/02	--	500	ND		ND		ND	
	ug/L	03/06/03	--	500	ND		ND		ND	
	ug/L	09/23/03	--	500	ND		ND		ND	
	ug/L	03/11/04	--	500	ND		ND		ND	
	ug/L	09/23/04	--	500	ND		ND		ND	
	ug/L	03/10/05	--	500	ND		ND		ND	
	ug/L	09/22/05	--	500	ND		ND		ND	
	ug/L	03/06/06	--	500	ND		ND		ND	
	ug/L	09/19/06	--	500	ND		ND		ND	
	ug/L	03/21/07	--	100	67.8	J	78.9	J	0.30	J
	ug/L	09/28/07	--	--	Dry		Dry		0.30	J
	ug/L	03/26/08	--	100	500		64.8	J	0.30	J
	ug/L	09/29/08	--	100	136		48.5	J	ND	
	ug/L	03/30/09	--	100	205		54.8	J	ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	100	147		32.9	J	ND	
	ug/L	09/29/10	--	100	107		69.9	J	ND	
	ug/L	04/06/11	--	100	113		84.4	J	ND	
	ug/L	09/28/11	--	100	146		118		ND	
	ug/L	03/28/12	--	100	133		87.0	J	ND	
	ug/L	09/26/12	--	100	169		Dry		ND	
	ug/L	04/01/13	--	100	74.1	J	75.7	J	1.16	J
	ug/L	09/25/13	--	100	55.5	J	68.5	J	ND	
	ug/L	04/01/14	--	100	163		75.7	J	1.29	J
	ug/L	09/29/14	1.00	100	180		Dry		ND	
	ug/L	03/31/15	1.00	100	98.8	J	69.5	J	ND	
	ug/L	10/26/15	1.00	100	Dry		Dry		ND	
Beryllium	ug/L	03/21/07	--	1	ND		ND		ND	
SW Standard = 6.5 ug/L	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	1	ND		ND		ND	
	ug/L	09/29/08	--	1	ND		ND		0.1	J
	ug/L	03/30/09	--	1	0.28	J	0.08	J	ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	1	0.298	J	ND		ND	
	ug/L	09/29/10	--	1	0.278	J	0.131	J	ND	
	ug/L	04/06/11	--	1	0.212	J	0.140	J	ND	
	ug/L	09/28/11	--	1	0.227	J	ND		ND	
	ug/L	03/28/12	--	1	0.379	J	0.168	J	ND	
	ug/L	09/26/12	--	1	0.633	J	Dry		ND	
	ug/L	04/01/13	--	1	ND		ND		ND	
	ug/L	09/25/13	--	1	ND		ND		ND	
	ug/L	04/01/14	--	1	0.345	J	ND		ND	
	ug/L	09/29/14	0.100	1	ND		Dry		ND	
	ug/L	03/31/15	0.100	1	ND		ND		ND	
	ug/L	10/26/15	0.100	1	Dry		Dry		ND	

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks
					SW-2		SW-3		
Cadmium	ug/L	06/11/02	--	1	ND		ND		ND
SW Standard = 2 ug/L*	ug/L	11/01/02	--	1	ND		ND		ND
	ug/L	03/06/03	--	1	ND		ND		ND
	ug/L	09/23/03	--	1	ND		ND		ND
	ug/L	03/11/04	--	1	ND		ND		ND
	ug/L	09/23/04	--	1	ND		ND		ND
	ug/L	03/10/05	--	1	ND		ND		ND
	ug/L	09/22/05	--	1	ND		ND		ND
	ug/L	03/06/06	--	1	ND		ND		ND
	ug/L	09/19/06	--	1	ND		ND		ND
	ug/L	03/21/07	--	1	ND		ND		ND
	ug/L	09/28/07	--	--	Dry		Dry		--
	ug/L	03/26/08	--	1	ND		ND		ND
	ug/L	09/29/08	--	1	ND		ND		ND
	ug/L	03/30/09	--	1	0.51	J	0.13	J	ND
	ug/L	09/30/09	--	--	Dry		Dry		--
	ug/L	03/30/10	--	1	ND		ND		ND
	ug/L	09/29/10	--	1	ND		ND		ND
	ug/L	04/06/11	--	1	ND		ND		ND
	ug/L	09/28/11	--	1	ND		ND		ND
	ug/L	03/28/12	--	1	ND		ND		ND
	ug/L	09/26/12	--	1	ND		Dry		ND
	ug/L	04/01/13	--	1	ND		ND		ND
	ug/L	09/25/13	--	1	ND		ND		ND
	ug/L	04/01/14	--	1	ND		ND		ND
	ug/L	09/29/14	0.360	1	ND		Dry		ND
	ug/L	03/31/15	0.360	1	ND		ND		ND
	ug/L	10/26/15	0.360	1	Dry		Dry		ND
Chromium	ug/L	06/11/02	--	10	**234**		ND		ND
SW Standard = 50 ug/L	ug/L	11/01/02	--	10	ND		ND		ND
	ug/L	03/06/03	--	10	ND		ND		ND
	ug/L	09/23/03	--	10	ND		ND		ND
	ug/L	03/11/04	--	10	ND		ND		ND
	ug/L	09/23/04	--	10	ND		ND		ND
	ug/L	03/10/05	--	10	ND		ND		ND
	ug/L	09/22/05	--	10	ND		ND		ND
	ug/L	03/06/06	--	10	ND		ND		ND
	ug/L	09/19/06	--	10	ND		ND		ND
	ug/L	03/21/07	--	10	ND		ND		ND
	ug/L	09/28/07	--	--	Dry		Dry		--
	ug/L	03/26/08	--	10	10.0		ND		ND
	ug/L	09/29/08	--	10	ND		ND		ND
	ug/L	03/30/09	--	10	4.2	J	1.0	J	ND
	ug/L	09/30/09	--	--	Dry		Dry		--
	ug/L	03/30/10	--	10	2.97	J	ND		ND
	ug/L	09/29/10	--	10	2.64	J	1.47	J	ND
	ug/L	04/06/11	--	10	3.94	J	1.31	J	ND
	ug/L	09/28/11	--	10	5.15	J	4.32	J	ND
	ug/L	03/28/12	--	10	4.84	J	ND		ND
	ug/L	09/26/12	--	10	9.73	J	Dry		ND
	ug/L	04/01/13	--	10	1.48	J	ND		ND
	ug/L	09/25/13	--	10	2.64	J	2.65	J	ND
	ug/L	04/01/14	--	10	8.34	J	3.72	J	ND
	ug/L	09/29/14	1.40	10	14.2		Dry		ND
	ug/L	03/31/15	1.40	10	3.70	J	2.37	J	ND
	ug/L	10/26/15	1.40	10	Dry		Dry		ND

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Cobalt	ug/L	03/21/07	--	10	ND		ND		ND	
No SW Standard	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	8.9	J	2.6	J	ND	
	ug/L	09/29/08	--	10	ND		ND		ND	
	ug/L	03/30/09	--	10	3.6	J	0.6	J	ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	2.37	J	ND		ND	
	ug/L	09/29/10	--	10	2.01	J	1.36	J	ND	
	ug/L	04/06/11	--	10	1.93	J	1.58	J	ND	
	ug/L	09/28/11	--	10	1.85	J	3.58	J	ND	
	ug/L	03/28/12	--	10	2.54	J	1.55	J	ND	
	ug/L	09/26/12	--	10	2.77	J	Dry		ND	
	ug/L	04/01/13	--	10	ND		ND		ND	
	ug/L	09/25/13	--	10	ND		ND		ND	
	ug/L	04/01/14	--	10	2.55	J	ND		ND	
	ug/L	09/29/14	1.10	10	3.81	J	Dry		ND	
	ug/L	03/31/15	1.10	10	ND		ND		ND	
	ug/L	10/26/15	1.10	10	Dry		Dry		ND	
Copper	ug/L	03/21/07	--	10	ND		ND		0.60	J
SW Standard = 7 ug/L*	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	ND		0.90	B	0.60	J
	ug/L	09/29/08	--	10	ND		ND		ND	
	ug/L	03/30/09	--	10	2.02	B	2.05	B	1.39	J
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	2.05	J	ND		ND	
	ug/L	09/29/10	--	10	2.19	J	2.31	J	ND	
	ug/L	04/06/11	--	10	3.82	B	2.46	B	2.07	J
	ug/L	09/28/11	--	10	3.29	J	5.21	J	ND	
	ug/L	03/28/12	--	10	3.83	J	ND		ND	
	ug/L	09/26/12	--	10	7.86	J	Dry		ND	
	ug/L	04/01/13	--	10	2.90	J	2.25	J	ND	
	ug/L	09/25/13	--	10	1.71	J	2.12	J	ND	
	ug/L	04/01/14	--	10	5.40	J	2.85	J	ND	
	ug/L	09/29/14	1.60	10	ND		Dry		ND	
	ug/L	03/31/15	1.60	10	3.22	J	2.02	J	ND	
	ug/L	10/26/15	1.60	10	Dry		Dry		ND	
Lead	ug/L	06/11/02	--	10	14		ND		ND	
SW Standard = 25 ug/L*	ug/L	11/01/02	--	10	11		ND		ND	
	ug/L	03/06/03	--	10	ND		ND		ND	
	ug/L	09/23/03	--	10	15		ND		ND	
	ug/L	03/11/04	--	10	14		ND		ND	
	ug/L	09/23/04	--	10	ND		ND		ND	
	ug/L	03/10/05	--	10	ND		ND		ND	
	ug/L	09/22/05	--	10	ND		23		ND	
	ug/L	03/06/06	--	10	ND		ND		ND	
	ug/L	09/19/06	--	10	ND		ND		ND	
	ug/L	03/21/07	--	10	3.4	B	2.2	B	2.7	J
	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	**29.4**		ND		ND	
	ug/L	09/29/08	--	10	2.6	J	ND		ND	
	ug/L	03/30/09	--	10	8.0	J	3.5	J	ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	12.6		3.17	J	ND	
	ug/L	09/29/10	--	10	6.17	J	4.38	J	ND	
	ug/L	04/06/11	--	10	6.75	J	4.03	J	ND	
	ug/L	09/28/11	--	10	10.5		ND		ND	
	ug/L	03/28/12	--	10	9.18	J	3.44	J	ND	
	ug/L	09/26/12	--	10	15.5		Dry		ND	
	ug/L	04/01/13	--	10	ND		ND		ND	
	ug/L	09/25/13	--	10	ND		ND		ND	
	ug/L	04/01/14	--	10	16.1		3.14	J	ND	
	ug/L	09/29/14	2.10	10	ND		Dry		ND	
	ug/L	03/31/15	3.10	10	3.18	J	ND		ND	
	ug/L	10/26/15	3.10	10	Dry		Dry		ND	

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Nickel	ug/L	03/21/07	--	50	ND		ND		ND	
SW Standard = 88 ug/L*	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	50	ND		ND		ND	
	ug/L	09/29/08	--	50	1.8	J	ND		ND	
	ug/L	03/30/09	--	50	4.8	J	1.2	B	0.6	J
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	50	ND		ND		ND	
	ug/L	09/29/10	--	50	ND		ND		ND	
	ug/L	04/06/11	--	50	ND		ND		ND	
	ug/L	09/28/11	--	50	1.91	J	2.75	J	ND	
	ug/L	03/28/12	--	50	ND		ND		ND	
	ug/L	09/26/12	--	50	2.36	J	Dry		ND	
	ug/L	04/01/13	--	50	ND		ND		ND	
	ug/L	09/25/13	--	50	ND		ND		ND	
	ug/L	04/01/14	--	50	2.53	J	2.13	J	ND	
	ug/L	09/29/14	1.80	50	ND		Dry		ND	
	ug/L	03/31/15	1.80	50	ND		ND		ND	
	ug/L	10/26/15	1.80	50	Dry		Dry		ND	
Selenium	ug/L	06/11/02	--	20	ND		ND		ND	
SW Standard = 5 ug/L	ug/L	11/01/02	--	20	ND		ND		ND	
	ug/L	03/06/03	--	20	ND		ND		ND	
	ug/L	09/23/03	--	20	ND		ND		ND	
	ug/L	03/11/04	--	20	ND		ND		ND	
	ug/L	09/23/04	--	20	ND		ND		ND	
	ug/L	03/10/05	--	20	ND		ND		ND	
	ug/L	09/22/05	--	20	ND		ND		ND	
	ug/L	03/06/06	--	20	ND		ND		ND	
	ug/L	09/19/06	--	20	ND		ND		ND	
	ug/L	03/21/07	--	10	2.9	B	ND		2.5	J
	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	ND		ND		ND	
	ug/L	09/29/08	--	10	ND		ND		ND	
	ug/L	03/30/09	--	10	ND		ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	ND		ND		ND	
	ug/L	09/29/10	--	10	ND		ND		ND	
	ug/L	04/06/11	--	10	ND		ND		ND	
	ug/L	09/28/11	--	10	ND		ND		ND	
	ug/L	03/28/12	--	10	ND		ND		3.32	J
	ug/L	09/26/12	--	10	ND		Dry		ND	
	ug/L	04/01/13	--	10	ND		ND		ND	
	ug/L	09/25/13	--	10	ND		ND		ND	
	ug/L	04/01/14	--	10	ND		ND		ND	
	ug/L	09/29/14	5.00	10	ND		Dry		ND	
	ug/L	03/31/15	5.00	10	ND		ND		ND	
	ug/L	03/31/15	0.910	10	ND		ND		ND	
	ug/L	10/26/15	0.910	10	Dry		Dry		ND	

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Silver	ug/L	06/11/02	--	10	ND		ND		ND	
SW Standard = 0.06 ug/L *	ug/L	11/01/02	--	10	ND		ND		ND	
	ug/L	03/06/03	--	10	ND		ND		ND	
	ug/L	09/23/03	--	10	ND		ND		ND	
	ug/L	03/11/04	--	10	ND		ND		ND	
	ug/L	09/23/04	--	10	ND		ND		ND	
	ug/L	03/10/05	--	10	ND		ND		ND	
	ug/L	09/22/05	--	10	ND		ND		ND	
	ug/L	03/06/06	--	10	ND		ND		ND	
	ug/L	09/19/06	--	10	ND		ND		ND	
	ug/L	03/21/07	--	10	ND		ND		ND	
	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	ND		ND		ND	
	ug/L	09/29/08	--	10	ND		ND		ND	
	ug/L	03/30/09	--	10	**1.0**	**J**	ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	ND		ND		ND	
	ug/L	09/29/10	--	10	ND		ND		ND	
	ug/L	04/06/11	--	10	ND		ND		ND	
	ug/L	09/28/11	--	10	ND		ND		ND	
	ug/L	03/28/12	--	10	ND		ND		ND	
	ug/L	09/26/12	--	10	ND		Dry		ND	
	ug/L	04/01/13	--	10	ND		ND		ND	
	ug/L	09/25/13	--	10	ND		ND		ND	
	ug/L	04/01/14	--	10	ND		ND		ND	
	ug/L	09/29/14	1.90	10	ND		Dry		ND	
	ug/L	03/31/15	1.90	10	ND		ND		ND	
	ug/L	10/26/15	1.90	10	Dry		Dry		ND	
Thallium	ug/L	03/21/07	--	5.5	ND		ND		ND	
No SW Standard	ug/L	09/28/07	--	5.5	Dry		Dry		--	
	ug/L	03/26/08	--	5.5	0.159	J	0.046	J	ND	
	ug/L	09/29/08	--	5.5	0.050	B	ND		0.062	J
	ug/L	03/30/09	--	5.5	ND		ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	5.5	ND		ND		ND	
	ug/L	09/29/10	--	5.5	ND		ND		ND	
	ug/L	04/06/11	--	5.5	ND		ND		ND	
	ug/L	09/28/11	--	5.5	ND		ND		ND	
	ug/L	03/28/12	--	5.5	ND		ND		ND	
	ug/L	09/26/12	--	5.5	ND		Dry		ND	
	ug/L	04/01/13	--	5.5	ND		ND		ND	
	ug/L	09/25/13	--	5.5	ND		ND		ND	
	ug/L	04/01/14	--	5.5	0.175	J	ND		ND	
	ug/L	09/29/14	0.110	5.5	0.162	B	Dry		0.253	J
	ug/L	03/31/15	0.110	5.5	ND		ND		ND	
	ug/L	10/26/15	0.110	5.5	Dry		Dry		ND	

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Vanadium	ug/L	03/21/07	--	25	1.1	J	1.8	J	ND	
No SW Standard	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	25	44.9		1.4	J	ND	
	ug/L	09/29/08	--	25	ND		ND		ND	
	ug/L	03/30/09	--	25	12.7	J	3.9	J	ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	25	15.1	J	1.96	J	ND	
	ug/L	09/29/10	--	25	12.6	J	6.54	J	ND	
	ug/L	04/06/11	--	25	13.1	J	4.07	J	ND	
	ug/L	09/28/11	--	25	18.0	J	7.24	J	ND	
	ug/L	03/28/12	--	25	26.1		3.41	J	ND	
	ug/L	09/26/12	--	25	42.0		Dry		ND	
	ug/L	04/01/13	--	25	3.87	J	3.03	J	ND	
	ug/L	09/25/13	--	25	3.78	J	3.95	J	ND	
	ug/L	04/01/14	--	25	38.2		8.80	J	ND	
	ug/L	09/29/14	1.40	25	13.7	J	Dry		ND	
	ug/L	03/31/15	1.40	25	11.7	J	3.37	J	ND	
	ug/L	10/26/15	1.40	25	Dry		Dry		ND	
Zinc	ug/L	03/21/07	--	10	4.9	B	8.4	J	1.1	J
SW Standard = 50 ug/L*	ug/L	09/28/07	--	--	Dry		Dry		--	
	ug/L	03/26/08	--	10	**73.2**		15.1		2.8	J
	ug/L	09/29/08	--	10	36.3		11.8		ND	
	ug/L	03/30/09	--	10	**236**		9.0	J	ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	10	30.6		15.6		ND	
	ug/L	09/29/10	--	10	17.5		11.9		ND	
	ug/L	04/06/11	--	10	19.4		7.82	J	ND	
	ug/L	09/28/11	--	10	20.0		10.6		ND	
	ug/L	03/28/12	--	10	22.5		9.60	J	ND	
	ug/L	09/26/12	--	10	26.7		Dry		ND	
	ug/L	04/01/13	--	10	5.17	J	9.35	J	ND	
	ug/L	09/25/13	--	10	5.19	J	5.87	J	ND	
	ug/L	04/01/14	--	10	22.8		8.27	J	ND	
	ug/L	09/29/14	3.80	10	7.74	J	Dry		ND	
	ug/L	03/31/15	3.80	10	13.7		5.46	J	ND	
	ug/L	10/26/15	3.80	10	Dry		Dry		ND	
Acetone	ug/L	03/21/07	--	100	ND		ND		ND	
SW Standard = 2000 ug/L	ug/L	03/26/08	--	100	9.2	J	6.7	J	ND	
	ug/L	09/29/08	--	100	11	J	ND		3.5	J
	ug/L	03/30/09	--	100	29	J	ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	100	ND		ND		ND	
	ug/L	09/29/10	--	100	ND		ND		ND	
	ug/L	04/06/11	--	100	4.3	J	ND		ND	
	ug/L	09/28/11	--	100	ND		37	J	ND	
	ug/L	03/28/12	--	100	ND		8.7	J	ND	
	ug/L	09/26/12	--	100	ND		Dry		ND	
	ug/L	04/01/13	--	100	ND		ND		ND	
	ug/L	09/25/13	--	100	ND		ND		ND	
	ug/L	04/01/14	--	100	ND		ND		ND	
	ug/L	09/29/14	1.2	100	12	J	Dry		ND	
	ug/L	03/31/15	1.2	100	ND		ND		ND	
	ug/L	10/26/15	1.2	100	Dry		Dry		ND	

TABLE 6

Summary of Surface Water Monitoring Results
Detected Constituents
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	MDL	SWS Reporting Limit	Downstream				Blanks	
					SW-2		SW-3			
Chloromethane	ug/L	03/21/07	--	1	ND		ND		ND	
No SW Standard	ug/L	03/26/08	--	1	ND		ND		ND	
	ug/L	09/29/08	--	1	ND		ND		ND	
	ug/L	03/30/09	--	1	ND		ND		ND	
	ug/L	03/30/10	--	1	ND		ND		ND	
	ug/L	09/29/10	--	1	0.56	B	0.76	B	0.44	J
	ug/L	04/06/11	--	1	ND		ND		ND	
	ug/L	09/28/11	--	1	ND		ND		ND	
	ug/L	03/28/12	--	1	ND		ND		ND	
	ug/L	09/26/12	--	1	ND		Dry		ND	
	ug/L	04/01/13	--	1	ND		ND		ND	
	ug/L	09/25/13	--	1	ND		ND		ND	
	ug/L	04/01/14	--	1	ND		ND		ND	
	ug/L	09/29/14	0.13	1	ND		Dry		ND	
	ug/L	03/31/15	0.13	1	ND		ND		ND	
	ug/L	10/26/15	0.13	1	Dry		Dry		ND	
2-Butanone	ug/L	03/21/07	--	100	ND		ND		ND	
SW Standard = 160,000 ug/L	ug/L	03/26/08	--	100	ND		ND		ND	
	ug/L	09/29/08	--	100	ND		ND		ND	
	ug/L	03/30/09	--	100	26	J	ND		ND	
	ug/L	09/30/09	--	--	Dry		Dry		--	
	ug/L	03/30/10	--	100	ND		ND		ND	
	ug/L	09/29/10	--	100	ND		ND		ND	
	ug/L	04/06/11	--	100	ND		ND		ND	
	ug/L	09/28/11	--	100	ND		4.9	J	ND	
	ug/L	03/28/12	--	100	ND		ND		ND	
	ug/L	09/26/12	--	100	ND		Dry		ND	
	ug/L	04/01/13	--	100	ND		ND		ND	
	ug/L	09/25/13	--	100	ND		ND		ND	
	ug/L	04/01/14	--	100	ND		ND		ND	
	ug/L	09/29/14	1.3	100	ND		Dry		ND	
	ug/L	03/31/15	1.3	100	ND		ND		ND	
	ug/L	10/26/15	1.3	100	Dry		Dry		ND	

Notes:
mg/L = milligrams per liter
ug/L = micrograms per liter
S.U. = Standard Units
NTU = Nephelometric Turbidity Units
ND = Not detected at the stated reporting limit
uS/cm= microsiemens per centimeter
mV = Millivolts
J = Estimated value
-- = no data
SW Standard = Surface Water Standard based on Class C Freshwater Aquatic Life Classification
Bolded = Concentrations above applicable Surface Water Standards
Blanks = field, trip and method blanks

1) The previous SW-1 location was in a wetland area that had been removed from the site for landfill expansion following the March 2004 sampling event. During the March 2007 sampling event, SW-1 was relocated. Due to construction activities prior to the March 2008 sampling event, no upstream surface monitoring point is available to sample.
2) Surface Water Standards based on Class C Freshwater Aquatic Life classification for the Jim Branch in the Cape Fear basin per 15A NCAC 2B.
*SW Standards for Cd, Pb, and Ni are Narrative Standards per 2B .0211
*SW Standards for Cu, Ag, and Zn are Action Level Standards per 2B .0211

SWS Reporting Limit = NCPQL or lab-specific reporting limit prior to 2007 and NCSWSL starting on 01/18/07

TABLE 7

Summary of Field Parameters from Surface Water Monitoring Points
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	Downstream	
			SW-2	SW-3
pH (field)	S.U.	06/11/02	7.70	6.50
	S.U.	11/01/02	6.10	7.00
	S.U.	03/06/03	6.00	5.80
	S.U.	09/23/03	5.20	5.10
	S.U.	03/11/04	6.30	6.40
	S.U.	09/23/04	6.70	6.80
	S.U.	03/10/05	6.60	7.20
	S.U.	09/22/05	7.60	7.20
	S.U.	03/06/06	7.60	4.80
	S.U.	09/19/06	7.00	6.90
	S.U.	03/21/07	8.63	6.68
	S.U.	09/28/07	Dry	Dry
	S.U.	03/26/08	7.52	6.11
	S.U.	09/29/08	7.52	6.99
	S.U.	03/30/09	7.60	6.68
	S.U.	09/30/09	Dry	Dry
	S.U.	03/30/10	7.63	6.17
	S.U.	09/29/10	10.68	10.78
	S.U.	04/06/11	7.68	5.68
	S.U.	09/28/11	7.98	6.37
	S.U.	03/28/12	7.46	6.40
	S.U.	09/26/12	8.78	Dry
	S.U.	04/01/13	7.31	6.16
	S.U.	09/25/13	8.23	7.11
	S.U.	04/01/14	7.84	6.42
	S.U.	09/29/14	7.54	Dry
	S.U.	03/31/15	7.86	6.88
	S.U.	10/26/15	Dry	Dry
Specific Conductance	uS/cm	06/11/02	140	120
(lab prior to 9/19/06 event)	uS/cm	11/01/02	105	155
	uS/cm	03/06/03	82	90
	uS/cm	09/23/03	116	128
	uS/cm	03/11/04	16	114
	uS/cm	09/23/04	138	112
	uS/cm	03/10/05	108	222
	uS/cm	09/22/05	166	300
	uS/cm	03/06/06	162	295
	uS/cm	09/19/06	160	170
	uS/cm	03/21/07	153	285
	uS/cm	09/28/07	Dry	Dry
	uS/cm	03/26/08	779	195
	uS/cm	09/29/08	261	190
	uS/cm	03/30/09	585	127
	uS/cm	09/30/09	Dry	Dry
	uS/cm	03/30/10	235	222
	uS/cm	09/29/10	70	85
	uS/cm	04/06/11	478	219
	uS/cm	09/28/11	206	216
	uS/cm	03/28/12	162	208
	uS/cm	09/26/12	57	Dry
	uS/cm	04/01/13	200	210
	uS/cm	09/25/13	205	291
	uS/cm	04/01/14	232	269
	uS/cm	09/29/14	1864	Dry
	uS/cm	03/31/15	246	223
	uS/cm	10/26/15	Dry	Dry

TABLE 7

Summary of Field Parameters from Surface Water Monitoring Points
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	Downstream	
			SW-2	SW-3
Temperature	Celsius	06/11/02	20.0	21.0
(lab prior to 9/19/06 event)	Celsius	11/01/02	11.0	11.0
	Celsius	03/06/03	13.0	13.0
	Celsius	09/23/03	22.0	21.0
	Celsius	03/11/04	8.0	8.0
	Celsius	09/23/04	20.0	18.0
	Celsius	03/10/05	7.0	6.0
	Celsius	09/22/05	24.0	23.0
	Celsius	03/06/06	13.0	11.0
	Celsius	09/19/06	23.0	21.0
	Celsius	03/21/07	11.7	12.4
	Celsius	09/28/07	Dry	Dry
	Celsius	03/26/08	7.42	10.5
	Celsius	09/29/08	21.66	19.59
	Celsius	03/30/09	17.30	11.04
	Celsius	09/30/09	Dry	Dry
	Celsius	03/30/10	14.44	17.35
	Celsius	09/29/10	21.30	21.41
	Celsius	04/06/11	13.61	9.56
	Celsius	09/28/11	22.77	24.10
	Celsius	03/28/12	15.66	21.20
	Celsius	09/26/12	17.94	Dry
	Celsius	04/01/13	13.71	19.26
	Celsius	09/25/13	16.6	18.6
	Celsius	04/01/14	12.4	16.7
	Celsius	09/29/14	17.5	Dry
	Celsius	03/31/15	9.30	16.2
	Celsius	10/26/15	Dry	Dry
Turbidity (field)	NTU	03/21/07	146	183
	NTU	09/28/07	Dry	Dry
	NTU	03/26/08	>1000	446
	NTU	09/29/08	151	22.7
	NTU	03/30/09	407	57.7
	NTU	09/30/09	Dry	Dry
	NTU	03/30/10	403	35.7
	NTU	09/29/10	225	291
	NTU	04/06/11	191	46.6
	NTU	09/28/11	484	115
	NTU	03/28/12	331	77.5
	NTU	09/26/12	682	Dry
	NTU	04/01/13	61.7	56.0
	NTU	09/25/13	47.7	66.3
	NTU	04/01/14	624	129
	NTU	09/29/14	83.2	Dry
	NTU	03/31/15	118	34.3
	NTU	10/26/15	Dry	Dry

TABLE 7

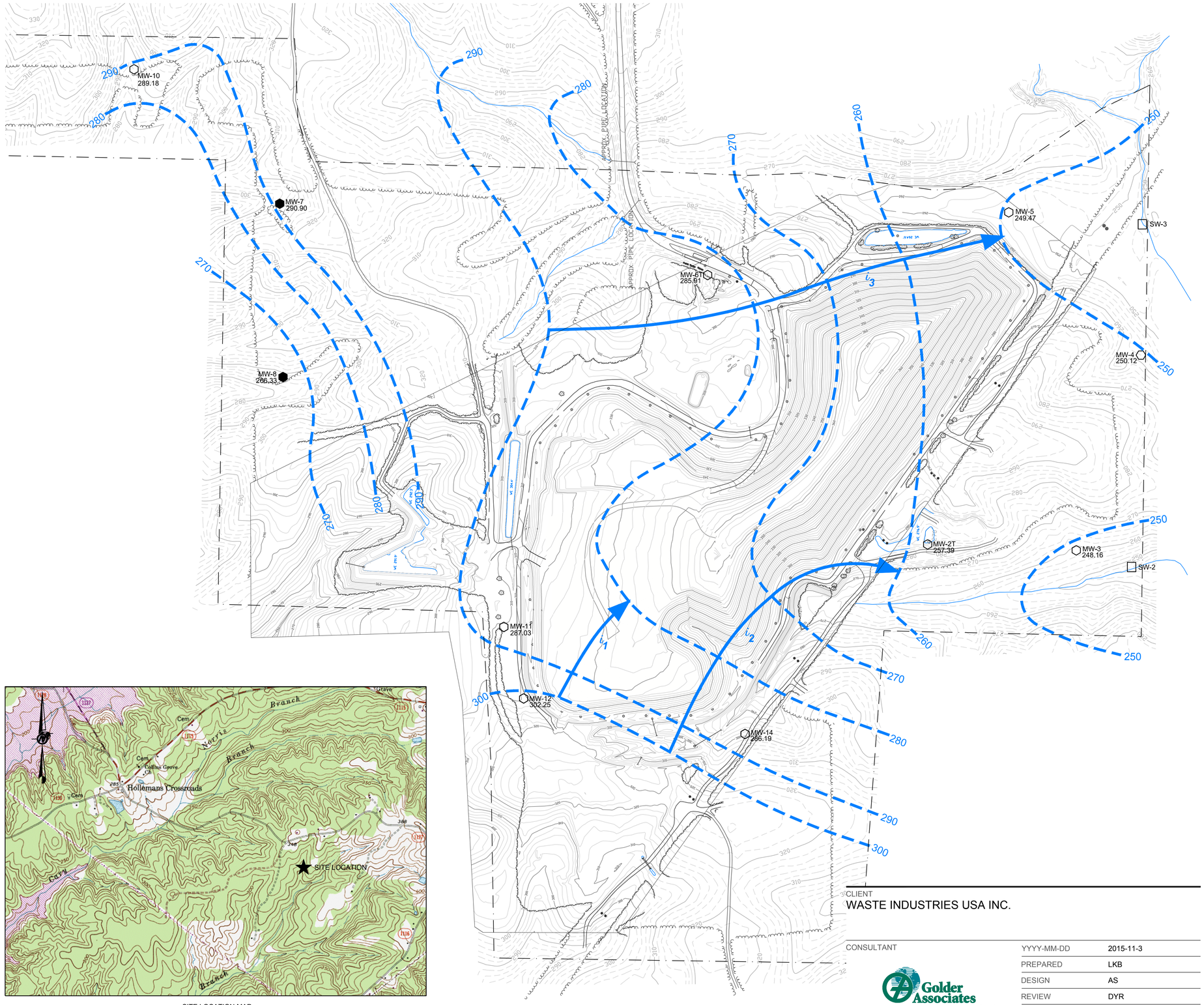
Summary of Field Parameters from Surface Water Monitoring Points
Red Rock Disposal, LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

Detected Monitoring Constituent/Parameter	Reporting Units	Sample Date	Downstream	
			SW-2	SW-3
Oxidation Reduction Potential (field)	mV	03/21/07	67	114
	mV	09/28/07	Dry	Dry
	mV	03/26/08	118.7	132.8
	mV	09/29/08	76	29
	mV	03/30/09	53.4	81.6
	mV	09/30/09	Dry	Dry
	mV	03/30/10	74.8	115.3
	mV	09/29/10	-368.9	-356.4
	mV	04/06/11	87.0	150.2
	mV	09/28/11	43.7	102
	mV	03/28/12	28.3	58.1
	mV	09/26/12	-49.0	Dry
	mV	04/01/13	-17.4	48.4
	mV	09/25/13	46.9	111.1
	mV	04/01/14	71.3	46.7
	mV	09/29/14	-105.2	Dry
	mV	03/31/15	66.7	80.1
	mV	10/26/15	Dry	Dry
Dissolved Oxygen (field)	mg/L	03/21/07	10.3	9.9
	mg/L	09/28/07	Dry	Dry
	mg/L	03/26/08	10.36	5.16
	mg/L	09/29/08	9.09	6.79
	mg/L	03/30/09	7.98	10.30
	mg/L	09/30/09	Dry	Dry
	mg/L	03/30/10	8.93	9.71
	mg/L	09/29/10	8.93	8.77
	mg/L	04/06/11	10.17	7.25
	mg/L	09/28/11	4.36	3.62
	mg/L	03/28/12	8.82	5.52
	mg/L	09/26/12	6.71	Dry
	mg/L	04/01/13	7.54	8.67
	mg/L	09/25/13	6.59	7.47
	mg/L	04/01/14	7.49	7.86
	mg/L	09/29/14	1.84	Dry
	mg/L	03/31/15	9.93	11.41
	mg/L	10/26/15	Dry	Dry

Notes:
S.U. = Standard Units
NTU = Nephelometric Turbidity Units
uS/cm = microsiemens per centimeter
mg/L = milligramer per liter
mV = Millivolts
-- = no data

1) The previous SW-1 location was in a wetland area that had been removed from the site for landfill expansion following the March 2004 sampling event. During the March 2007 sampling event, SW-1 was relocated. Due to construction activities occurring prior to March 2008 sampling event, no upstream surface monitoring point is available to sample.

DRAWING



SITE LOCATION MAP
(DRAWING IS NOT TO SCALE)

LEGEND

10 FT. CONTOUR INTERVAL	
2 FT. CONTOUR INTERVAL	
FACILITY BOUNDARY	
TREELINE	
EXISTING ROAD	
STREAM	
GROUNDWATER SURFACE 10 FT. CONTOURS	250
APPROXIMATE GROUNDWATER FLOW SEGMENT USED TO CALCULATE GRADIENT	i_1
GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION	MW-2T 257.39
SURFACE WATER MONITORING POINT	SW-3
NON-COMPLIANCE WELL (WATER LEVELS ONLY)	MW-7
NOT MEASURED	NM

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 FEET
2. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET
3. GROUNDWATER ELEVATIONS MEASURED ON OCTOBER 26, 2015.
4. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
5. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.
6. GRID COORDINATES REFERENCE NC STATE PLANE SYSTEM (NAD 1983)
7. ELEVATION REFERENCE U.S.G.S VERTICAL DATUM (MSL).
8. BASE MAP PROVIDED BY RICHARDSON SMITH GARDNER & ASSOCIATES. TOPOGRAPHY PROVIDED FROM AERIAL SURVEYS PREPARED BY SURVERYING SOLUTIONS P.C., PHOTGRAPHY DATES JANUARY 8, 2015 AND JANUARY 20, 2014.
9. THE FACILITY BOUNDARY SHOWN REFERENCES DRAWING TITLED, "BOUNDARY SURVEY FOR WASTE INDUSTRIES." PREPARED BY SURVEY SOLUTIONS, P.C. DATED 12/27/00, SCALE 1" = 400'. (G.N. RICHARDSON & ASSOCIATES, INC SEPTEMBER 2006)
10. GROUNDWATER CONTOURS IN THE VICINITY OF MW-7 AND MW-8 WERE CONSTRUCTED BASED ON HISTORICAL DATA.
11. WELL MW-13 WAS DECOMMISSIONED BY RSG ON MAY 2, 2011.

0 200 400
SCALE FEET

CLIENT
WASTE INDUSTRIES USA INC.

CONSULTANT
Golder Associates
GOLDER ASSOCIATES NC. INC.

YYYY-MM-DD	2015-11-3
PREPARED	LKB
DESIGN	AS
REVIEW	DYR
APPROVED	RPK

PROJECT
RED ROCK DISPOSAL, LLC CONSTRUCTION DEMOLITION LANDFILL, PERMIT NO. 92-28
WAKE COUNTY, NC

TITLE
GROUNDWATER CONTOUR MAP
OCTOBER 26, 2015

PROJECT No.	PHASE	Rev.	DRAWING
0739603515	100	0	1

Path: \\greensboro\CAD_2007\0739603 - WI - Red Rock\PRODUCTION\C - 2015 GW\ | File Name: 0739603515C002.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D
0 1 in

APPENDIX A

GROUNDWATER, SURFACE WATER, AND LEACHATE SAMPLING LOGS

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-2T
Sampler(s): B. DRAPER / T. MARTINEZ
Well Diameter: 2 inches
Initial Depth to Water: 23.80 feet
Depth to Bottom: 81.34 feet
Water Column Thickness: 57.54 feet
Pumping Rate: 150 mL/min.
System Volume: 500 mL
Well Location: South of Landfill next to sed pond
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
1245	7.45	2189	3.23	4.82	18.2	63.2	24.92
1249	7.00	2357	3.81	0.64	17.7	-71.6	25.55
1253	7.33	2351	1.78	0.27	17.5	-124.2	26.89
1257	7.26	2313	1.47	0.28	17.5	-109.2	27.48
1301	7.12	2283	2.16	0.38	17.4	-81.6	28.51
1305	7.00	2172	0.66	~~0.6~~ 1.48	17.3	-56.7	29.29
1309	6.96	2146	0.78	2.00	17.3	-43.7	30.27
1313	6.93	2142	0.78	2.10	17.3	-38.0	31.00
1317	6.93	2139	0.83	2.15	17.2	-32.5	31.84
			Sampled @ 1317				

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Calm

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 11/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-3
Sampler(s): B. DRAPER / T. MARTINEC
Well Diameter: 2 inches
Initial Depth to Water: 13.64 feet
Depth to Bottom: 31.50 feet
Water Column Thickness: 17.86 feet
Pumping Rate: 150 mL/min.
System Volume: 500 mL
Well Location: South of LF along access trail
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
12:00	6.65	5455	7.67	2.74	16.4	-15.7	15.11
1204	6.81	5453	6.67	3.67	16.5	-3.1	15.45
1208	6.86	5452	3.24	3.62	16.4	22.7	16.25
1212	6.88	5452	1.96	3.79	16.5	29.2	16.98
1216	6.89	5452	1.09	3.83	16.5	37.0	18.03
		Sampled @		1216			

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; CALM

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-4
Sampler(s): B. DRAPER / T. MARTINEZ
Well Diameter: 2 inches
Initial Depth to Water: 3.98 feet
Depth to Bottom: 17.34 feet
Water Column Thickness: 13.36 feet
Pumping Rate: 150 mL/min.
System Volume: 500 mL
Well Location: South of Landfill
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
1340	5.68	120.2	17.9	3.69	16.8	116.2	5.78
1344	5.59	93.2	14.4	4.51	16.9	136.3	6.14
1348	5.51	84.6	14.0	4.65	16.9	155.3	6.36
1352	5.34	80.0	13.9	4.44	16.9	181.7	7.25
1356	5.33	75.7	14.0	4.20	16.9	182.7	7.38
1400	5.32	75.3	14.0	3.94	16.9	184.8	7.39
1404	5.30	75.4	15.6	3.85	17.0	188.1	7.53
		Sampled @		1404			

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Calm

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-5 (MS/MSD)
Sampler(s): B Draper, T Martinez
Well Diameter: 2 inches
Initial Depth to Water: 5.00 feet
Depth to Bottom: 16.35 feet
Water Column Thickness: 11.35 feet
Pumping Rate: 200 mL/min.
System Volume: 500 mL
Well Location: SE of LF along access road
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
1435	5.78	4553	2.55	1.76	16.9	-5.5	5.70
1438	6.35	6786	1.22	1.29	17.1	-3.8	6.04
1441	6.42	6830	0.73	1.11	17.2	4.0	6.38
1444	6.43	5432	0.71	1.00	17.2	7.6	6.75
1447	6.34	4160	0.57	0.88	17.2	22.1	7.08
1450	6.21	3198	0.75	0.74	17.2	23.4	7.20
1453	6.13	2714	0.97	2.06	17.1	37.6	7.42
1456	6.09	2535	0.98	2.46	17.0	63.8	7.60
1459	6.05	2501	0.93	2.33	17.0	83.7	8.04
1502	6.02	2496	1.16	2.29	17.0	87.0	8.30
		Sampled @ 1502					

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Calm

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-LET
Sampler(s): B. DRAPER / T. MARTINEZ
Well Diameter: 2 inches
Initial Depth to Water: 3.30 feet
Depth to Bottom: 58.58 feet
Water Column Thickness: 55.28 feet
Pumping Rate: 200 mL/min.
System Volume: 500 mL
Well Location: Next to scale house
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
1529	6.78	181.1	61.5	1.62	17.9	-17.9	4.09
1532	6.70	7121	6.78	1.58	17.5	-30.3	4.60
1535	6.69	7122	3.58	1.11	17.5	-28.8	4.82
1538	6.71	7085	2.34	1.09	17.4	-31.2	5.14
1541	6.72	7044	2.62	0.91	17.4	-34.2	5.61
			Sampled @ 1541				

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Slight Breeze

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-10
Sampler(s): B. Draper, T. Martinez
Well Diameter: 2 inches
Initial Depth to Water: 11.98 feet
Depth to Bottom: 31.23 feet
Water Column Thickness: 19.25 feet
Pumping Rate: 150 mL/min.
System Volume: 500 mL
Well Location: North of LF along access road
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
0945	6.67	1858	0.91	1.42	16.5	98.6	13.41
0949	6.67	1850	0.70	1.48	16.6	79.5	13.50
0953	6.68	1846	0.59	1.10	16.6	73.9	13.65
0957	6.69	1834	0.72	1.00	16.6	73.4	13.84
1001	6.69	1814	0.52	0.80	16.6	76.4	14.08
1005	6.69	1802	0.50	0.60	16.6	80.8	14.18
1009	6.69	1797	0.52	0.52	16.6	82.9	14.21
1013	6.69	1792	0.56	0.45	16.5	86.4	14.26
			Sampled @	1013			

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Slight Breeze

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-11
Sampler(s): B. DEAPER / T. MARTINEZ
Well Diameter: 2 inches
Initial Depth to Water: 23.74 feet
Depth to Bottom: 52.90 feet
Water Column Thickness: 29.16 feet
Pumping Rate: 200 mL/min.
System Volume: 500 mL
Well Location: North of LF along perimeter road
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
1055	7.90	561.2	0.91	1.77	17.4	23.7	24.62
1058	7.53	563.3	0.87	1.29	17.1	-24.2	24.80
11:01	7.46	565.8	1.35	0.66	17.0	-59.0	25.21
11:04	7.45	563.8	1.04	0.35	16.9	-73.9	25.75
11:07	7.45	561.4	1.05	0.28	16.8	-85.9	26.21
11:10	7.42	560.1	0.87	0.25	16.8	-90.7	26.79
		Sampled @		11:10			

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Slight Breeze

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: WI - Red Rock
Project No./Phase No.: 739603515
Well ID: MW-14
Sampler(s): B. DRAPER / T. MARTINEZ
Well Diameter: 2 inches
Initial Depth to Water: 15.01 feet
Depth to Bottom: 35.19 feet
Water Column Thickness: 20.18 feet
Pumping Rate: 200 mL/min.
System Volume: 500 mL
Well Location: SW of Landfill along perimeter road
Equipment: YSI 556, Hach 2100Q turbidimeter, WL meter, dedicated bladder pump

Time	pH (S.U.)	Cond. (mS/cm)	Turb (NTU)	Dis O_2 (mg/L)	Temp. (°C)	ORP (millivolts)	DTW (feet)
11:28	6.88	545.2	12.1	4.38	16.6	25.0	16.18
11:31	6.85	541.6	12.5	3.99	16.5	30.2	16.48
11:34	6.81	540.3	9.25	3.71	16.5	36.2	16.81
11:37	6.81	541.4	7.49	3.67	16.6	32.7	17.09
11:40	6.81	540.9	5.26	3.75	16.5	23.5	17.36
		Sampled @		1140			

Comments (weather conditions, color, type of sample, purge-water management, etc.):
Cloudy; 60°F; Slight Breeze

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

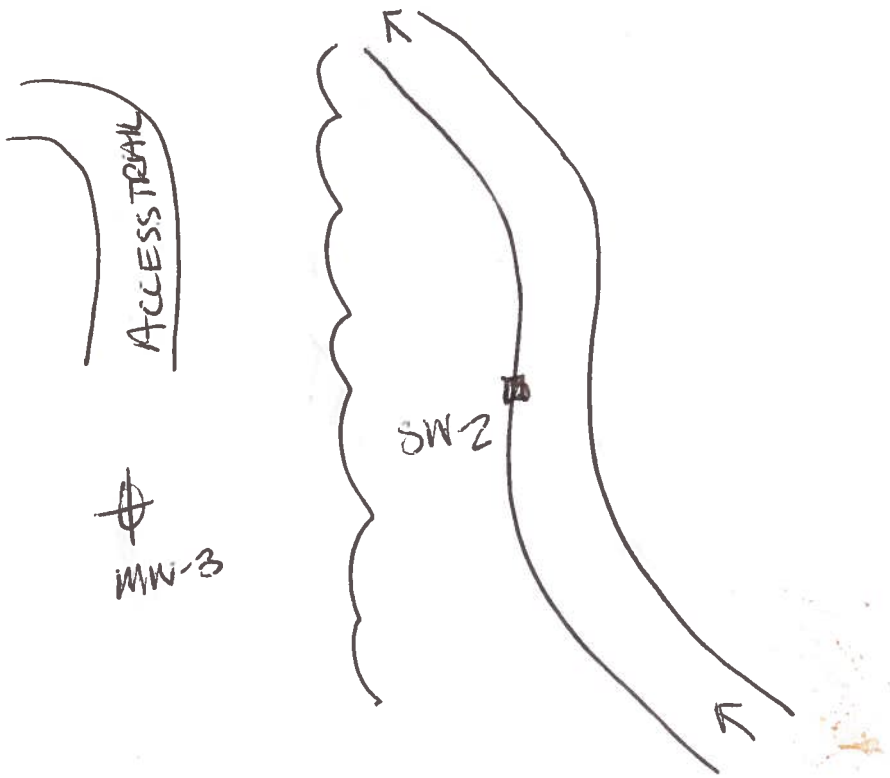
Golder Associates

SURFACE WATER SAMPLING LOG

Project Name: WI - Red Rock **Project No./Phase No.:** 739603515
Sample ID: SW-2 **Sampler(s):** B. DRAPER / T. MARTINER
Sampling Location: Stream Near MW-3
Equipment: YSI 556, Hach 2100Q Turbidimeter

Time	1230
pH s.u.	DRY
Cond. mS/cm	DRY
Turb. ntu	DRY
Dis. O_2 mg/L	DRY
Temp. °C	DRY
ORP mv	DRY

Surface Water Sampling Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):
DRY NO SAMPLE

Signature: [signature] **Date:** 10/26/15

QA/QC Sign Off: [signature] **Date:** 12-21-15

DATE: 10/26/15

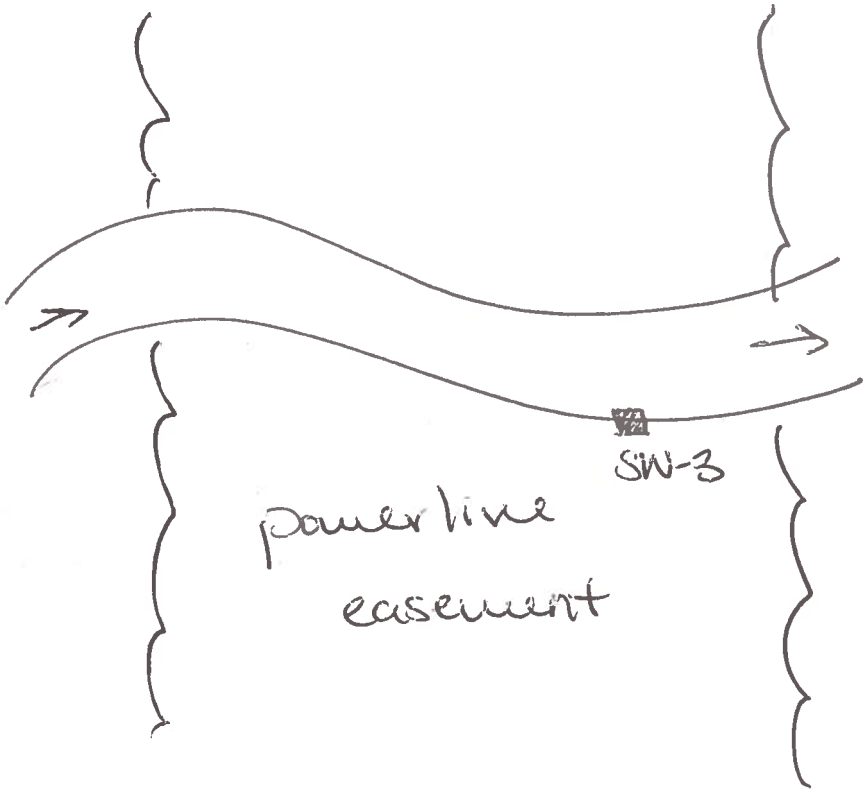
Golder Associates

SURFACE WATER SAMPLING LOG

Project Name: *WI - Red Rock* **Project No./Phase No.:** *739603515*
Sample ID: SW-3 **Sampler(s):** B. DRAPER / T. MARTINEC
Sampling Location:
Equipment: *YSI 556, Hach 2100Q Turbidimeter*

Time	DRY
pH s.u.	DRY
Cond. mS/cm	DRY
Turb. ntu	DRY
Dis. O_2 mg/L	DRY
Temp. °C	DRY
ORP mv	DRY

Surface Water Sampling Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):

Signature: [signature] **Date:** 10-20-15

QA/QC Sign Off: [signature] **Date:** 12-21-15

APPENDIX B

OCTOBER 2015 GROUNDWATER AND SURFACE WATER CERTIFICATES-OF-ANALYSIS, CHAIN-OF-CUSTODY FORMS AND LABORATORY DATA REVIEWS

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515

RECEIVED 12.22-15

ENCO

www.encolabs.com

Wednesday, December 16, 2015

Golder Associates, Inc. (GO007)

Attn: Dusty Reedy

5B Oak Branch Drive

Greensboro, NC 27407

RE: Laboratory Results for
Project Number: 0739-603515.100, Project Name/Desc: WI- Red Rock
ENCO Workorder(s): C511919

Dear Dusty Reedy,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, October 27, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Stephanie Franz

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 67.

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PROJECT NARRATIVE

Date: 16 December 2015
Client: Golder Associates, Inc. (GO007)
Project: WI- Red Rock
Lab ID: C511919

Overview

This report is an amendment to the original report dated 09 November 2015 for this work order. This report was revised, at the client's request, to confirm the concentration of Nickel in sample MW-6 T and to analyze the same sample for Dissolved Nickel.

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

Quality Control Samples

The spike recovery of 1,1-Dichloroethene was outside of control limits for the 8260B MS sample. The QC batch was approved based on acceptable LCS recovery of this analyte.

The spike recovery of Thallium was outside of control limits for the 6020A MSD and Post Spike samples. The QC batch was approved based on acceptable LCS recovery of this element.

The spike recoveries of Alkalinity and Sulfate were outside of control limits for the MS and/or MSD samples, and precision between duplicate spikes of Chloride and Sulfate exceeded acceptance criteria. The QC batches were approved based on acceptable LCS recovery of these analytes.

Quality Control Remarks

No Comments

Other Comments

At the client's request, sample MW-6T was reprepped and reanalyzed for Nickel. The reanalysis concentration confirmed the originally reported value; only the original value is included in this report. The reanalysis information is available upon request.

All samples received under this work order arrived in acceptable conditions. The samples were not checked for residual chlorine, as it is not required. Samples SW-2 and SW-3 were not submitted for analysis, as the sources were dry at the time of collection.

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:
Environmental Conservation Laboratories, Inc.

Stephanie Franz
Project Manager

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 9228-MW2T | **Lab ID: C511919-01** | **Sampled: 10/26/15 13:17** | **Received: 10/27/15 12:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15	08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15	13:44	11/2/2015 15:57
EPA 6010C	04/23/16	10/28/15	13:49	10/30/2015 12:20
EPA 6020A	04/23/16	10/28/15	13:05	11/2/2015 10:44
EPA 7470A	11/23/15	10/29/15	13:18	10/30/2015 10:23
EPA 8260B	11/09/15	11/02/15	14:22	11/3/2015 18:09
SM 2540C-1997	11/02/15	11/02/15	13:52	11/2/2015 13:52

Client ID: 9228-MW2T | **Lab ID: C511919-01RE1** | **Sampled: 10/26/15 13:17** | **Received: 10/27/15 12:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15	08:10	11/6/2015 08:10

Client ID: 9228-MW3 | **Lab ID: C511919-02** | **Sampled: 10/26/15 12:16** | **Received: 10/27/15 12:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15	08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15	13:44	11/2/2015 15:58
EPA 6010C	04/23/16	10/28/15	13:49	10/30/2015 12:23
EPA 6020A	04/23/16	10/28/15	13:05	11/2/2015 10:48
EPA 7470A	11/23/15	10/29/15	13:18	10/30/2015 10:25
EPA 8260B	11/09/15	11/02/15	14:22	11/3/2015 18:38
SM 2540C-1997	11/02/15	11/02/15	13:52	11/2/2015 13:52

Client ID: 9228-MW3 | **Lab ID: C511919-02RE1** | **Sampled: 10/26/15 12:16** | **Received: 10/27/15 12:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15	08:10	11/6/2015 08:10

Client ID: 9228-MW4 | **Lab ID: C511919-03** | **Sampled: 10/26/15 14:04** | **Received: 10/27/15 12:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15	08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15	13:44	11/2/2015 15:59
EPA 6010C	04/23/16	10/28/15	13:49	10/30/2015 12:26
EPA 6020A	04/23/16	10/28/15	13:05	11/2/2015 10:51
EPA 7470A	11/23/15	10/29/15	13:18	10/30/2015 10:27
EPA 8260B	11/09/15	11/02/15	14:22	11/3/2015 19:07
SM 2540C-1997	11/02/15	11/02/15	13:52	11/2/2015 13:52

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Client ID: 9228-MW5 (ms/msd)	Lab ID: C511919-04	Sampled: 10/26/15 15:02	Received: 10/27/15 12:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15 13:44	11/2/2015 16:00
EPA 6010C	04/23/16	10/28/15 13:49	10/30/2015 12:03
EPA 6020A	04/23/16	10/28/15 13:05	11/2/2015 10:26
EPA 7470A	11/23/15	10/29/15 13:18	10/30/2015 10:12
EPA 8260B	11/09/15	11/03/15 16:46	11/6/2015 16:59
SM 2540C-1997	11/02/15	11/02/15 13:52	11/2/2015 13:52

Client ID: 9228-MW5 (ms/msd)	Lab ID: C511919-04RE1	Sampled: 10/26/15 15:02	Received: 10/27/15 12:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10

Client ID: 9228-MW6T	Lab ID: C511919-05	Sampled: 10/26/15 15:41	Received: 10/27/15 12:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15 13:44	11/2/2015 16:01
EPA 6010C	04/23/16	10/28/15 13:49	10/30/2015 15:46
EPA 6010C	04/23/16	12/10/15 14:13	12/15/2015 11:27
EPA 6020A	04/23/16	10/28/15 13:05	11/2/2015 11:07
EPA 7470A	11/23/15	10/29/15 13:18	10/30/2015 10:34
EPA 8260B	11/09/15	11/02/15 14:22	11/3/2015 19:35
SM 2540C-1997	11/02/15	11/02/15 13:52	11/2/2015 13:52

Client ID: 9228-MW6T	Lab ID: C511919-05RE1	Sampled: 10/26/15 15:41	Received: 10/27/15 12:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10

Client ID: 9228-MW10	Lab ID: C511919-06	Sampled: 10/26/15 10:13	Received: 10/27/15 12:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15 13:44	11/2/2015 16:02
EPA 6010C	04/23/16	10/28/15 13:49	10/30/2015 12:54
EPA 6020A	04/23/16	10/28/15 13:05	11/2/2015 11:10
EPA 7470A	11/23/15	10/29/15 13:18	10/30/2015 10:37
EPA 8260B	11/09/15	11/02/15 14:22	11/3/2015 20:04
SM 2540C-1997	11/02/15	11/02/15 13:52	11/2/2015 13:52

Client ID: 9228-MW10	Lab ID: C511919-06RE1	Sampled: 10/26/15 10:13	Received: 10/27/15 12:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10

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Client ID: 9228-MW11	Lab ID: C511919-07	Sampled: 10/26/15 11:10	Received: 10/27/15 12:00

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15 13:44	11/2/2015 16:04
EPA 6010C	04/23/16	10/28/15 13:49	10/30/2015 13:01
EPA 6020A	04/23/16	10/28/15 13:05	11/2/2015 11:14
EPA 7470A	11/23/15	10/29/15 13:18	10/30/2015 10:40
EPA 8260B	11/09/15	11/02/15 14:22	11/3/2015 20:33
SM 2540C-1997	11/02/15	11/02/15 13:52	11/2/2015 13:52

Client ID: 9228-MW14	Lab ID: C511919-08	Sampled: 10/26/15 11:40	Received: 10/27/15 12:00

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	11/23/15	11/06/15 08:10	11/6/2015 08:10
EPA 310.2	11/09/15	11/02/15 13:44	11/2/2015 16:05
EPA 6010C	04/23/16	10/28/15 13:49	10/30/2015 13:04
EPA 6020A	04/23/16	10/28/15 13:05	11/2/2015 11:18
EPA 7470A	11/23/15	10/29/15 13:18	10/30/2015 10:42
EPA 8260B	11/09/15	11/02/15 14:22	11/3/2015 21:02
SM 2540C-1997	11/02/15	11/02/15 13:52	11/2/2015 13:52

Client ID: 9228-Field Blank	Lab ID: C511919-09	Sampled: 10/26/15 15:51	Received: 10/27/15 12:00

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	04/23/16	10/28/15 13:49	10/30/2015 13:06
EPA 6020A	04/23/16	10/28/15 13:05	11/2/2015 11:21
EPA 7470A	11/23/15	10/29/15 13:18	10/30/2015 10:45
EPA 8260B	11/09/15	11/02/15 14:22	11/3/2015 21:31

Client ID: 9228-Trip Blank	Lab ID: C511919-10	Sampled: 10/26/15 10:13	Received: 10/27/15 12:00

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	11/09/15	11/02/15 14:22	11/3/2015 17:11

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NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 9228-MW2T — **Lab ID: C511919-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Antimony - Total	0.954	J	1	0.220	2.00	6	ug/L	EPA 6020A	
Barium - Total	35.5	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Iron - Total	283	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Lead - Total	3.65	J	1	3.10	10.0	10	ug/L	EPA 6010C	
Manganese - Total	57.6		1	1.10	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	44000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	300000	D	5	70000	75000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	1200000		1	50000	50000	NE	ug/L	SM 2540C-1997	

Client ID: 9228-MW2T — **Lab ID: C511919-01RE1**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chloride	480000	D	10	22000	50000	NE	ug/L	EPA 300.0	

Client ID: 9228-MW3 — **Lab ID: C511919-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Antimony - Total	0.450	J	1	0.220	2.00	6	ug/L	EPA 6020A	
Barium - Total	2220		1	1.00	10.0	100	ug/L	EPA 6010C	
Chromium - Total	13.5		1	1.40	10.0	10	ug/L	EPA 6010C	
Iron - Total	150	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	14.1	J	1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	44.7	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Silver - Total	11.9		1	1.90	10.0	10	ug/L	EPA 6010C	
Sulfate as SO4	4600	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	330000	D	3	42000	45000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	3600000		1	100000	100000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	21.9	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	8.77	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 9228-MW3 — **Lab ID: C511919-02RE1**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chloride	1700000	D	20	44000	100000	NE	ug/L	EPA 300.0	

Client ID: 9228-MW4 — **Lab ID: C511919-03**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Antimony - Total	0.242	J	1	0.220	2.00	6	ug/L	EPA 6020A	
Barium - Total	19.3	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	5500		1	2200	5000	NE	ug/L	EPA 300.0	
Iron - Total	981		1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	58.8		1	1.10	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	9300	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	38000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	88000		1	50000	50000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	2.85	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	4.17	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 9228-MW5 (ms/msd) — **Lab ID: C511919-04**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Antimony - Total	2.94	J	1	0.220	2.00	6	ug/L	EPA 6020A	

Client ID: 9228-MW5 (ms/msd)							Lab ID: C511919-04		
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	107		1	1.00	10.0	100	ug/L	EPA 6010C	
Beryllium - Total	0.281	J	1	0.100	1.00	1	ug/L	EPA 6010C	
Cadmium - Total	0.536	J	1	0.360	1.00	1	ug/L	EPA 6010C	
Chromium - Total	5.52	J	1	1.40	10.0	10	ug/L	EPA 6010C	
Iron - Total	115	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	280		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	5.65	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Silver - Total	3.13	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Sulfate as SO4	87000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	100000		1	28000	30000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	1600000		1	100000	100000	NE	ug/L	SM 2540C-1997	
Zinc - Total	8.08	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 9228-MW5 (ms/msd)							Lab ID: C511919-04RE1		
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chloride	730000	D	10	22000	50000	NE	ug/L	EPA 300.0	

Client ID: 9228-MW6T							Lab ID: C511919-05		
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Antimony - Total	0.381	J	1	0.220	2.00	6	ug/L	EPA 6020A	
Barium - Total	2440		1	1.00	10.0	100	ug/L	EPA 6010C	
Chromium - Total	2.96	J	1	1.40	10.0	10	ug/L	EPA 6010C	
Iron - Total	1090		1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	1780		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	124		1	1.80	10.0	50	ug/L	EPA 6010C	
Nickel - Dissolved	68.0		1	1.80	10.0	50	ug/L	EPA 6010C	
Silver - Total	9.88	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Sulfate as SO4	17000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	380000	D	4	56000	60000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	4900000		1	100000	100000	NE	ug/L	SM 2540C-1997	
Zinc - Total	3.88	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 9228-MW6T							Lab ID: C511919-05RE1		
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chloride	2300000	D	25	54000	120000	NE	ug/L	EPA 300.0	

Client ID: 9228-MW10							Lab ID: C511919-06		
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	1180		1	1.00	10.0	100	ug/L	EPA 6010C	
Iron - Total	24.2	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	1130		1	1.10	10.0	50	ug/L	EPA 6010C	
Silver - Total	2.87	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Sulfate as SO4	12000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	260000	D	4	56000	60000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	890000		1	50000	50000	NE	ug/L	SM 2540C-1997	

Client ID: 9228-MW10							Lab ID: C511919-06RE1		
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chloride	360000	D	5	11000	25000	NE	ug/L	EPA 300.0	

Client ID: 9228-MW11								Lab ID: CS11919-07	
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	15.4	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	9900		1	2200	5000	NE	ug/L	EPA 300.0	
Iron - Total	59.1	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	57.5		1	1.10	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	13000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	290000	D	3	42000	45000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	320000		1	50000	50000	NE	ug/L	SM 2540C-1997	

Client ID: 9228-MW14								Lab ID: CS11919-08	
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	70.3	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	30000		1	2200	5000	NE	ug/L	EPA 300.0	
Iron - Total	276	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	77.9		1	1.10	10.0	50	ug/L	EPA 6010C	
Silver - Total	2.70	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Sulfate as SO4	11000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	220000	D	2	28000	30000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	320000		1	50000	50000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	9.74	J	1	1.40	10.0	25	ug/L	EPA 6010C	

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ANALYTICAL RESULTS

Description: 9228-MW2T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-01
Sampled: 10/26/15 13:17
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 18:09	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 18:09	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 18:09	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 18:09	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 18:09	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 18:09	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 18:09	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 18:09	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 18:09	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 18:09	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 18:09	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 18:09	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 18:09	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 18:09	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 18:09	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 18:09	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 18:09	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 18:09	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 18:09	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 18:09	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 18:09	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 18:09	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 18:09	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 18:09	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 18:09	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 18:09	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 18:09	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 18:09	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 18:09	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 18:09	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 18:09	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 18:09	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 18:09	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 18:09	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 18:09	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 18:09	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 18:09	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 18:09	REF	

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Description: 9228-MW2T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-01
Sampled: 10/26/15 13:17
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	44	1	50.0	88 %	53-136	5K03029	EPA 8260B	11/03/15 18:09	REF	
Dibromofluoromethane	47	1	50.0	95 %	67-129	5K03029	EPA 8260B	11/03/15 18:09	REF	
Toluene-d8	45	1	50.0	90 %	59-134	5K03029	EPA 8260B	11/03/15 18:09	REF	

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Description: 9228-MW2T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-01
Sampled: 10/26/15 13:17
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:23	BAM	

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Description: 9228-MW2T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-01
Sampled: 10/26/15 13:17
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	**0.954**	J	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 10:44	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Barium [7440-39-3] ^	**35.5**	J	ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 12:20	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 12:20	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 12:20	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Iron [7439-89-6] ^	**283**	J	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 12:20	JDH	
Lead [7439-92-1] ^	**3.65**	J	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Manganese [7439-96-5] ^	**57.6**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 12:20	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 12:20	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 12:20	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 10:44	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 12:20	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 12:20	JDH	

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Description: 9228-MW2T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-01
Sampled: 10/26/15 13:17
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**480000**	D	ug/L	10	22000	50000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**44000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**300000**	D	ug/L	5	70000	75000	NE	EPA 310.2	11/02/15 15:57	JLJ	
Total Dissolved Solids^	**1200000**		ug/L	1	50000	50000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-MW3
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-02
Sampled: 10/26/15 12:16
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 18:38	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 18:38	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 18:38	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 18:38	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 18:38	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 18:38	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 18:38	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 18:38	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 18:38	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 18:38	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 18:38	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 18:38	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 18:38	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 18:38	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 18:38	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 18:38	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 18:38	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 18:38	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 18:38	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 18:38	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 18:38	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 18:38	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 18:38	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 18:38	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 18:38	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 18:38	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 18:38	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 18:38	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 18:38	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 18:38	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 18:38	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 18:38	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 18:38	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 18:38	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 18:38	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 18:38	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 18:38	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 18:38	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*44*	*1*	*50.0*	*89 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 18:38*	*REF*	

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Description: 9228-MW3
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-02
Sampled: 10/26/15 12:16
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	48	1	50.0	96 %	67-129	5K03029	EPA 8260B	11/03/15 18:38	REF	
Toluene-d8	46	1	50.0	92 %	59-134	5K03029	EPA 8260B	11/03/15 18:38	REF	

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Description: 9228-MW3
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-02
Sampled: 10/26/15 12:16
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:25	BAM	

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Description: 9228-MW3
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-02
Sampled: 10/26/15 12:16
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	**0.450**	J	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 10:48	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Barium [7440-39-3] ^	**2220**		ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 12:23	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 12:23	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 12:23	JDH	
Chromium [7440-47-3] ^	**13.5**		ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Iron [7439-89-6] ^	**150**	J	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 12:23	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Manganese [7439-96-5] ^	**14.1**	J	ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 12:23	JDH	
Nickel [7440-02-0] ^	**44.7**	J	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 12:23	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Silver [7440-22-4] ^	**11.9**		ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 12:23	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 10:48	VLO	
Vanadium [7440-62-2] ^	**21.9**	J	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 12:23	JDH	
Zinc [7440-66-6] ^	**8.77**	J	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 12:23	JDH	

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Description: 9228-MW3
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-02
Sampled: 10/26/15 12:16
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**1700000**	D	ug/L	20	44000	100000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**4600**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**330000**	D	ug/L	3	42000	45000	NE	EPA 310.2	11/02/15 15:58	JLJ	
Total Dissolved Solids^	**3600000**		ug/L	2	100000	100000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-MW4
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-03
Sampled: 10/26/15 14:04
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 19:07	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 19:07	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 19:07	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 19:07	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 19:07	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 19:07	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 19:07	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 19:07	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 19:07	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 19:07	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 19:07	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 19:07	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 19:07	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 19:07	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 19:07	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 19:07	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 19:07	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 19:07	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 19:07	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 19:07	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 19:07	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 19:07	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 19:07	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 19:07	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 19:07	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 19:07	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 19:07	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 19:07	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 19:07	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 19:07	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 19:07	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 19:07	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 19:07	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 19:07	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 19:07	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 19:07	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 19:07	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 19:07	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*45*	*1*	*50.0*	*90 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 19:07*	*REF*	

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Description: 9228-MW4
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-03
Sampled: 10/26/15 14:04
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	*50*	*1*	*50.0*	*101 %*	*67-129*	*5K03029*	*EPA 8260B*	*11/03/15 19:07*	*REF*	
Toluene-d8	*47*	*1*	*50.0*	*93 %*	*59-134*	*5K03029*	*EPA 8260B*	*11/03/15 19:07*	*REF*	

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Description: 9228-MW4
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-03
Sampled: 10/26/15 14:04
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:27	BAM	

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Description: 9228-MW4
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-03
Sampled: 10/26/15 14:04
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	**0.242**	J	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 10:51	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Barium [7440-39-3] ^	**19.3**	J	ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 12:26	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 12:26	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 12:26	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Iron [7439-89-6] ^	**981**		ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 12:26	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Manganese [7439-96-5] ^	**58.8**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 12:26	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 12:26	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 12:26	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 10:51	VLO	
Vanadium [7440-62-2] ^	**2.85**	J	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 12:26	JDH	
Zinc [7440-66-6] ^	**4.17**	J	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 12:26	JDH	

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Description: 9228-MW4
Matrix: Ground Water
Project: W1- Red Rock

Lab Sample ID: C511919-03
Sampled: 10/26/15 14:04
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	5500		ug/L	1	2200	5000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	9300	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	38000		ug/L	1	14000	15000	NE	EPA 310.2	11/02/15 15:59	JLJ	
Total Dissolved Solids^	88000		ug/L	1	50000	50000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-MW5 (ms/msd)
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-04
Sampled: 10/26/15 15:02
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/06/15 16:59	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/06/15 16:59	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/06/15 16:59	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/06/15 16:59	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/06/15 16:59	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/06/15 16:59	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/06/15 16:59	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/06/15 16:59	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/06/15 16:59	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/06/15 16:59	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/06/15 16:59	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/06/15 16:59	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/06/15 16:59	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/06/15 16:59	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/06/15 16:59	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/06/15 16:59	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/06/15 16:59	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/06/15 16:59	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/06/15 16:59	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/06/15 16:59	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/06/15 16:59	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/06/15 16:59	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/06/15 16:59	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/06/15 16:59	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/06/15 16:59	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/06/15 16:59	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/06/15 16:59	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/06/15 16:59	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/06/15 16:59	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/06/15 16:59	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/06/15 16:59	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/06/15 16:59	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/06/15 16:59	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/06/15 16:59	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/06/15 16:59	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/06/15 16:59	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/06/15 16:59	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/06/15 16:59	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*44*	*1*	*50.0*	*89 %*	*53-136*	*5K06029*	*EPA 8260B*	*11/06/15 16:59*	*REF*	

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Description: 9228-MW5 (ms/msd)
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-04
Sampled: 10/26/15 15:02
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	47	1	50.0	94 %	67-129	5K06029	EPA 8260B	11/04/15 16:59	REF	
Toluene-d8	45	1	50.0	91 %	59-134	5K06029	EPA 8260B	11/04/15 16:59	REF	

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Description: 9228-MW5 (ms/msd)
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-04
Sampled: 10/26/15 15:02
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:12	BAM	

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Description: 9228-MW5 (ms/msd)
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-04
Sampled: 10/26/15 15:02
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	**2.94**	J	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 10:26	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Barium [7440-39-3] ^	**107**		ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 12:03	JDH	
Beryllium [7440-41-7] ^	**0.281**	J	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 12:03	JDH	
Cadmium [7440-43-9] ^	**0.536**	J	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 12:03	JDH	
Chromium [7440-47-3] ^	**5.52**	J	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Iron [7439-89-6] ^	**115**	J	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 12:03	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Manganese [7439-96-5] ^	**280**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 12:03	JDH	
Nickel [7440-02-0] ^	**5.65**	J	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 12:03	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Silver [7440-22-4] ^	**3.13**	J	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 12:03	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 10:26	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 12:03	JDH	
Zinc [7440-66-6] ^	**8.08**	J	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 12:03	JDH	

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Description: 9228-MW5 (ms/msd)
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-04
Sampled: 10/26/15 15:02
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**730000**	D	ug/L	10	22000	50000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**87000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**100000**		ug/L	2	28000	30000	NE	EPA 310.2	11/02/15 16:00	JLJ	
Total Dissolved Solids^	**1600000**		ug/L	2	100000	100000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-MW6T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-05
Sampled: 10/26/15 15:41
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 19:35	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 19:35	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 19:35	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 19:35	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 19:35	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 19:35	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 19:35	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 19:35	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 19:35	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 19:35	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 19:35	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 19:35	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 19:35	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 19:35	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 19:35	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 19:35	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 19:35	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 19:35	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 19:35	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 19:35	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 19:35	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 19:35	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 19:35	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 19:35	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 19:35	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 19:35	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 19:35	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 19:35	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 19:35	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 19:35	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 19:35	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 19:35	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 19:35	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 19:35	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 19:35	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 19:35	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 19:35	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 19:35	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*46*	*1*	*50.0*	*92 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 19:35*	*REF*	

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Description: 9228-MW6T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-05
Sampled: 10/26/15 15:41
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
Dibromofluoromethane	*48*	*1*	*50.0*	*97 %*	*67-129*	*5K03029*	*EPA 8260B*	*11/03/15 19:35*	*REF*	
Toluene-d8	*48*	*1*	*50.0*	*95 %*	*59-134*	*5K03029*	*EPA 8260B*	*11/03/15 19:35*	*REF*	

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Description: 9228-MW6T
Matrix: Ground Water
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Lab Sample ID: C511919-05
Sampled: 10/26/15 15:41
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:34	BAM	

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Description: 9228-MW6T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-05
Sampled: 10/26/15 15:41
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	**0.381**	J	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 11:07	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Barium [7440-39-3] ^	**2440**		ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 15:46	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 15:46	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 15:46	JDH	
Chromium [7440-47-3] ^	**2.96**	J	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Iron [7439-89-6] ^	**1090**		ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 15:46	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Manganese [7439-96-5] ^	**1780**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 15:46	JDH	
Nickel [7440-02-0] ^	**124**		ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 15:46	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Silver [7440-22-4] ^	**9.88**	J	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 15:46	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 11:07	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 15:46	JDH	
Zinc [7440-66-6] ^	**3.88**	J	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 15:46	JDH	

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Description: 9228-MW6T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-05
Sampled: 10/26/15 15:41
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (Dissolved) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Nickel [7440-02-0] ^	**68.0**		ug/L	1	1.80	10.0	50	EPA 6010C	12/15/15 11:27	JDH	

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Description: 9228-MW6T
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-05
Sampled: 10/26/15 15:41
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**2300000**	D	ug/L	25	54000	120000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**17000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**380000**	D	ug/L	4	56000	60000	NE	EPA 310.2	11/02/15 16:01	JLJ	
Total Dissolved Solids^	**4900000**		ug/L	2	100000	100000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-MW10
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-06
Sampled: 10/26/15 10:13
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 20:04	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 20:04	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 20:04	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 20:04	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 20:04	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 20:04	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 20:04	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 20:04	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 20:04	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 20:04	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 20:04	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 20:04	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 20:04	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 20:04	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 20:04	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 20:04	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 20:04	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 20:04	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 20:04	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 20:04	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 20:04	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 20:04	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 20:04	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 20:04	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 20:04	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 20:04	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 20:04	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 20:04	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 20:04	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 20:04	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 20:04	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 20:04	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 20:04	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 20:04	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 20:04	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 20:04	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 20:04	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 20:04	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*45*	*1*	*50.0*	*89 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 20:04*	*REF*	

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Description: 9228-MW10
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-06
Sampled: 10/26/15 10:13
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	*48*	*1*	*50.0*	*97 %*	*67-129*	*5K03029*	*EPA 8260B*	*11/03/15 20:04*	*REF*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*59-134*	*5K03029*	*EPA 8260B*	*11/03/15 20:04*	*REF*	

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Description: 9228-MW10
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-06
Sampled: 10/26/15 10:13
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:37	BAM	

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Description: 9228-MW10
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-06
Sampled: 10/26/15 10:13
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 11:10	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Barium [7440-39-3] ^	**1180**		ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 12:54	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 12:54	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 12:54	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Iron [7439-89-6] ^	**24.2**	J	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 12:54	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Manganese [7439-96-5] ^	**1130**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 12:54	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 12:54	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Silver [7440-22-4] ^	**2.87**	J	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 12:54	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 11:10	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 12:54	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 12:54	JDH	

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Description: 9228-MW10
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-06
Sampled: 10/26/15 10:13
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**360000**	D	ug/L	5	11000	25000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**12000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**260000**	D	ug/L	4	56000	60000	NE	EPA 310.2	11/02/15 16:02	JLJ	
Total Dissolved Solids^	**890000**		ug/L	1	50000	50000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

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Description: 9228-MW11
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-07
Sampled: 10/26/15 11:10
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 20:33	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 20:33	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 20:33	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 20:33	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 20:33	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 20:33	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 20:33	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 20:33	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 20:33	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 20:33	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 20:33	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 20:33	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 20:33	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 20:33	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 20:33	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 20:33	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 20:33	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 20:33	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 20:33	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 20:33	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 20:33	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 20:33	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 20:33	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 20:33	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 20:33	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 20:33	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 20:33	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 20:33	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 20:33	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 20:33	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 20:33	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 20:33	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 20:33	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 20:33	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 20:33	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 20:33	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 20:33	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 20:33	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*45*	*1*	*50.0*	*89 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 20:33*	*REF*	

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Description: 9228-MW11
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-07
Sampled: 10/26/15 11:10
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	*48*	*1*	*50.0*	*97 %*	*67-129*	*5K03029*	*EPA 8260B*	*11/03/15 20:33*	*REF*	
Toluene-d8	*46*	*1*	*50.0*	*93 %*	*59-134*	*5K03029*	*EPA 8260B*	*11/03/15 20:33*	*REF*	

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Description: 9228-MW11
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-07
Sampled: 10/26/15 11:10
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:40	BAM	

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Description: 9228-MW11
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-07
Sampled: 10/26/15 11:10
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 11:14	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Barium [7440-39-3] ^	**15.4**	J	ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 13:01	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 13:01	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 13:01	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Iron [7439-89-6] ^	**59.1**	J	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 13:01	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Manganese [7439-96-5] ^	**57.5**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 13:01	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 13:01	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 13:01	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 11:14	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 13:01	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 13:01	JDH	

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Description: 9228-MW11
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-07
Sampled: 10/26/15 11:10
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**9900**		ug/L	1	2200	5000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**13000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**290000**	D	ug/L	3	42000	45000	NE	EPA 310.2	11/02/15 16:04	JLJ	
Total Dissolved Solids^	**320000**		ug/L	1	50000	50000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-MW14
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-08
Sampled: 10/26/15 11:40
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 21:02	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 21:02	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 21:02	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 21:02	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 21:02	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 21:02	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 21:02	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 21:02	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 21:02	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 21:02	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 21:02	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 21:02	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 21:02	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 21:02	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 21:02	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 21:02	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 21:02	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 21:02	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 21:02	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 21:02	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 21:02	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 21:02	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 21:02	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 21:02	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 21:02	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 21:02	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 21:02	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 21:02	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 21:02	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 21:02	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 21:02	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 21:02	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 21:02	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 21:02	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 21:02	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 21:02	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 21:02	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 21:02	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*45*	*1*	*50.0*	*89 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 21:02*	*REF*	

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Description: 9228-MW14
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-08
Sampled: 10/26/15 11:40
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	*50*	*1*	*50.0*	*99 %*	*67-129*	*5K03029*	*EPA 8260B*	*11/05/15 21:02*	*REF*	
Toluene-d8	*46*	*1*	*50.0*	*93 %*	*59-134*	*5K03029*	*EPA 8260B*	*11/05/15 21:02*	*REF*	

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Description: 9228-MW14
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-08
Sampled: 10/26/15 11:40
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:42	BAM	

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Description: 9228-MW14
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-08
Sampled: 10/26/15 11:40
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 11:18	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Barium [7440-39-3] ^	**70.3**	J	ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 13:04	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 13:04	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 13:04	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Iron [7439-89-6] ^	**276**	J	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 13:04	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Manganese [7439-96-5] ^	**77.9**		ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 13:04	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 13:04	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Silver [7440-22-4] ^	**2.70**	J	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 13:04	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 11:18	VLO	
Vanadium [7440-62-2] ^	**9.74**	J	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 13:04	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 13:04	JDH	

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Description: 9228-MW14
Matrix: Ground Water
Project: WI- Red Rock

Lab Sample ID: C511919-08
Sampled: 10/26/15 11:40
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**30000**		ug/L	1	2200	5000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**11000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**220000**	D	ug/L	2	28000	30000	NE	EPA 310.2	11/02/15 16:05	JLJ	
Total Dissolved Solids^	**320000**		ug/L	1	50000	50000	NE	SM 2540C-1997	11/02/15 13:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-Field Blank
Matrix: Water
Project: WI- Red Rock

Lab Sample ID: C511919-09
Sampled: 10/26/15 15:51
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 21:31	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 21:31	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 21:31	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 21:31	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 21:31	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 21:31	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 21:31	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 21:31	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 21:31	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 21:31	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 21:31	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 21:31	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 21:31	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 21:31	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 21:31	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 21:31	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 21:31	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 21:31	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 21:31	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 21:31	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 21:31	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 21:31	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 21:31	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 21:31	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 21:31	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 21:31	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 21:31	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 21:31	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 21:31	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 21:31	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 21:31	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 21:31	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 21:31	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 21:31	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 21:31	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 21:31	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 21:31	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 21:31	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*44*	*1*	*50.0*	*88 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 21:31*	*REF*	

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Description: 9228-Field Blank
Matrix: Water
Project: WI- Red Rock

Lab Sample ID: C511919-09
Sampled: 10/26/15 15:51
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*67-129*	*5K03029*	*EPA 6260B*	*11/03/15 21:31*	*REF*	
Toluene-d8	*48*	*1*	*50.0*	*95 %*	*59-134*	*5K03029*	*EPA 6260B*	*11/03/15 21:31*	*REF*	

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Description: 9228-Field Blank
Matrix: Water
Project: WI- Red Rock

Lab Sample ID: C511919-09
Sampled: 10/26/15 15:51
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	10/30/15 10:45	BAM	

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Description: 9228-Field Blank
Matrix: Water
Project: WI- Red Rock

Lab Sample ID: C511919-09
Sampled: 10/26/15 15:51
Sampled By: B. Draper/ T. Martinez

Received: 10/27/15 12:00
Work Order: C511919

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	11/02/15 11:21	VLO	
Arsenic [7440-38-2] ^	6.80	U	ug/L	1	6.80	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Barium [7440-39-3] ^	1.00	U	ug/L	1	1.00	10.0	100	EPA 6010C	10/30/15 13:06	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/30/15 13:06	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/30/15 13:06	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Cobalt [7440-48-4] ^	1.10	U	ug/L	1	1.10	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Iron [7439-89-6] ^	22.0	U	ug/L	1	22.0	50.0	300	EPA 6010C	10/30/15 13:06	JDH	
Lead [7439-92-1] ^	3.10	U	ug/L	1	3.10	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Manganese [7439-96-5] ^	1.10	U	ug/L	1	1.10	10.0	50	EPA 6010C	10/30/15 13:06	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	10/30/15 13:06	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/30/15 13:06	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	11/02/15 11:21	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	10/30/15 13:06	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	10/30/15 13:06	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 9228-Trip Blank
Matrix: Water
Project: WI- Red Rock

Lab Sample ID: C511919-10
Sampled: 10/26/15 10:13
Sampled By: ENCO

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/03/15 17:11	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/03/15 17:11	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/03/15 17:11	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 17:11	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/03/15 17:11	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 17:11	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 17:11	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/03/15 17:11	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/03/15 17:11	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/03/15 17:11	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/03/15 17:11	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/03/15 17:11	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/03/15 17:11	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/03/15 17:11	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/03/15 17:11	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/03/15 17:11	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/03/15 17:11	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/03/15 17:11	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/03/15 17:11	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/03/15 17:11	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/03/15 17:11	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/03/15 17:11	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 17:11	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/03/15 17:11	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/03/15 17:11	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 17:11	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/03/15 17:11	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/03/15 17:11	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/03/15 17:11	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/03/15 17:11	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/03/15 17:11	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/03/15 17:11	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/03/15 17:11	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 17:11	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/03/15 17:11	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/03/15 17:11	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/03/15 17:11	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/03/15 17:11	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*46*	*1*	*50.0*	*93 %*	*53-136*	*5K03029*	*EPA 8260B*	*11/03/15 17:11*	*REF*	

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Description: 9228-Trip Blank
Matrix: Water
Project: WI- Red Rock

Lab Sample ID: C511919-10
Sampled: 10/26/15 10:13
Sampled By: ENCO

Received: 10/27/15 12:00
Work Order: C511919

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
Dibromofluoromethane	*48*	*1*	*50.0*	*96 %*	*67-129*	*5K03029*	*EPA 8260B*	*11/03/15 17:11*	*REF*	
Toluene-d8	*46*	*1*	*50.0*	*91 %*	*59-134*	*5K03029*	*EPA 8260B*	*11/03/15 17:11*	*REF*	

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K03029 - EPA 5030B_MS

Blank (5K03029-BLK1) Prepared: 11/03/2015 12:48 Analyzed: 11/03/2015 13:19

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.17	U	1.0	ug/L							
1,1,1-Trichloroethane	0.12	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.28	U	1.0	ug/L							
1,1,2-Trichloroethane	0.14	U	1.0	ug/L							
1,1-Dichloroethane	0.13	U	1.0	ug/L							
1,1-Dichloroethene	0.21	U	1.0	ug/L							
1,2,3-Trichloropropane	0.23	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.66	U	1.0	ug/L							
1,2-Dichlorobenzene	0.19	U	1.0	ug/L							
1,2-Dichloroethane	0.21	U	1.0	ug/L							
1,2-Dichloropropane	0.10	U	1.0	ug/L							
1,4-Dichlorobenzene	0.19	U	1.0	ug/L							
2-Butanone	1.3	U	5.0	ug/L							
2-Hexanone	0.88	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.2	U	5.0	ug/L							
Acrylonitrile	3.5	U	10	ug/L							
Benzene	0.15	U	1.0	ug/L							
Bromochloromethane	0.48	U	1.0	ug/L							
Bromodichloromethane	0.17	U	1.0	ug/L							
Bromoform	0.22	U	1.0	ug/L							
Bromomethane	0.14	U	1.0	ug/L							
Carbon disulfide	1.5	U	5.0	ug/L							
Carbon tetrachloride	0.17	U	1.0	ug/L							
Chlorobenzene	0.17	U	1.0	ug/L							
Chloroethane	0.23	U	1.0	ug/L							
Chloroform	0.18	U	1.0	ug/L							
Chloromethane	0.13	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.15	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
Dibromochloromethane	0.17	U	1.0	ug/L							
Dibromomethane	0.27	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Iodomethane	1.7	U	5.0	ug/L							
Methylene chloride	0.23	U	1.0	ug/L							
Styrene	0.11	U	1.0	ug/L							
Tetrachloroethene	0.17	U	1.0	ug/L							
Tetrahydrofuran	0.80	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.21	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.70	U	1.0	ug/L							
Trichloroethene	0.15	U	1.0	ug/L							
Trichlorofluoromethane	0.24	U	1.0	ug/L							
Vinyl acetate	0.95	U	5.0	ug/L							
Vinyl chloride	0.32	U	1.0	ug/L							
Xylenes (Total)	0.45	U	3.0	ug/L							

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K03029 - EPA 5030B_MS

Blank (5K03029-BLK1) Continued Prepared: 11/03/2015 12:48 Analyzed: 11/03/2015 13:19

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*46*			*ug/L*	*50.0*		*92*	*53-136*			
Surrogate: Dibromofluoromethane	*44*			*ug/L*	*50.0*		*88*	*67-129*			
Surrogate: Toluene-d8	*41*			*ug/L*	*50.0*		*82*	*59-134*			

LCS (5K03029-BS1) Prepared: 11/03/2015 12:48 Analyzed: 11/03/2015 14:17

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	17		1.0	ug/L	20.0		84	75-133			
Benzene	20		1.0	ug/L	20.0		101	81-134			
Chlorobenzene	22		1.0	ug/L	20.0		109	83-117			
Toluene	22		1.0	ug/L	20.0		112	71-118			
Trichloroethene	20		1.0	ug/L	20.0		99	74-119			

Matrix Spike (5K03029-MS1) Prepared: 11/03/2015 12:48 Analyzed: 11/03/2015 15:14

Source: C513853-11

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	15		1.0	ug/L	20.0	0.21 U	73	75-133			QM-07
Benzene	19		1.0	ug/L	20.0	0.15 U	95	81-134			
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	103	83-117			
Toluene	22		1.0	ug/L	20.0	0.14 U	108	71-118			
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	88	74-119			

Matrix Spike Dup (5K03029-MSD1) Prepared: 11/03/2015 12:48 Analyzed: 11/03/2015 14:45

Source: C513853-11

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	17		1.0	ug/L	20.0	0.21 U	85	75-133	16	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	98	81-134	3	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	107	83-117	4	16	
Toluene	23		1.0	ug/L	20.0	0.14 U	114	71-118	5	17	
Trichloroethene	19		1.0	ug/L	20.0	0.15 U	96	74-119	9	22	

Batch 5K06029 - EPA 5030B_MS

Blank (5K06029-BLK1) Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 13:09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.17	U	1.0	ug/L							
1,1,1-Trichloroethane	0.12	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.28	U	1.0	ug/L							
1,1,2-Trichloroethane	0.14	U	1.0	ug/L							
1,1-Dichloroethane	0.13	U	1.0	ug/L							
1,1-Dichloroethene	0.21	U	1.0	ug/L							
1,2,3-Trichloropropane	0.23	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.66	U	1.0	ug/L							

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS

Blank (5K06029-BLK1) Continued Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 13:09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	0.19	U	1.0	ug/L							
1,2-Dichloroethane	0.21	U	1.0	ug/L							
1,2-Dichloropropane	0.10	U	1.0	ug/L							
1,4-Dichlorobenzene	0.19	U	1.0	ug/L							
2-Butanone	1.3	U	5.0	ug/L							
2-Hexanone	0.88	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.2	U	5.0	ug/L							
Acrylonitrile	3.5	U	10	ug/L							
Benzene	0.15	U	1.0	ug/L							
Bromochloromethane	0.48	U	1.0	ug/L							
Bromodichloromethane	0.17	U	1.0	ug/L							
Bromoform	0.22	U	1.0	ug/L							
Bromomethane	0.14	U	1.0	ug/L							
Carbon disulfide	1.5	U	5.0	ug/L							
Carbon tetrachloride	0.17	U	1.0	ug/L							
Chlorobenzene	0.17	U	1.0	ug/L							
Chloroethane	0.23	U	1.0	ug/L							
Chloroform	0.18	U	1.0	ug/L							
Chloromethane	0.13	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.15	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
Dibromochloromethane	0.17	U	1.0	ug/L							
Dibromomethane	0.27	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Iodomethane	1.7	U	5.0	ug/L							
Methylene chloride	0.23	U	1.0	ug/L							
Styrene	0.11	U	1.0	ug/L							
Tetrachloroethene	0.17	U	1.0	ug/L							
Tetrahydrofuran	0.80	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.21	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.70	U	1.0	ug/L							
Trichloroethene	0.15	U	1.0	ug/L							
Trichlorofluoromethane	0.24	U	1.0	ug/L							
Vinyl acetate	0.95	U	5.0	ug/L							
Vinyl chloride	0.32	U	1.0	ug/L							
Xylenes (Total)	0.45	U	3.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*45*			*ug/L*	*50.0*		*90*	*53-136*			
Surrogate: Dibromofluoromethane	*48*			*ug/L*	*50.0*		*96*	*67-129*			
Surrogate: Toluene-d8	*46*			*ug/L*	*50.0*		*92*	*59-134*			

LCS (5K06029-BS1) Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 16:01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	17		1.0	ug/L	20.0		85	75-133			
Benzene	21		1.0	ug/L	20.0		104	81-134			

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS

LCS (5K06029-BS1) Continued Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 16:01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	22		1.0	ug/L	20.0		108	83-117			
Toluene	22		1.0	ug/L	20.0		112	71-118			
Trichloroethene	19		1.0	ug/L	20.0		97	74-119			

Matrix Spike (5K06029-MS1) Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:06

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.21 U	78	75-133			
Benzene	19		1.0	ug/L	20.0	0.15 U	95	81-134			
Chlorobenzene	20		1.0	ug/L	20.0	0.17 U	102	83-117			
Toluene	21		1.0	ug/L	20.0	0.14 U	106	71-118			
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	90	74-119			

Matrix Spike Dup (5K06029-MSD1) Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:35

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.21 U	80	75-133	2	20	
Benzene	19		1.0	ug/L	20.0	0.15 U	96	81-134	1	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	103	83-117	1	16	
Toluene	22		1.0	ug/L	20.0	0.14 U	108	71-118	2	17	
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	91	74-119	1	22	

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 5J29023 - EPA 7470A

Blank (5J29023-BLK1) Prepared: 10/29/2015 13:18 Analyzed: 10/30/2015 10:08

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.170	U	0.200	ug/L							

LCS (5J29023-BS1) Prepared: 10/29/2015 13:18 Analyzed: 10/30/2015 10:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.61		0.200	ug/L	5.00		92	80-120			

Matrix Spike (5J29023-MS1) Prepared: 10/29/2015 13:18 Analyzed: 10/30/2015 10:14

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.41		0.200	ug/L	5.00	0.170 U	88	75-125			

Matrix Spike Dup (5J29023-MSD1) Prepared: 10/29/2015 13:18 Analyzed: 10/30/2015 10:16

Source: C511919-04

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 5J29023 - EPA 7470A

Matrix Spike Dup (5J29023-MSD1) Continued Prepared: 10/29/2015 13:18 Analyzed: 10/30/2015 10:16

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.33		0.200	ug/L	5.00	0.170 U	87	75-125	2	25	

Post Spike (5J29023-PS1) Prepared: 10/29/2015 13:18 Analyzed: 10/30/2015 10:18

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.59		0.200	ug/L	5.00	0.00900	92	75-125			

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5J28026 - EPA 3005A

Blank (5J28026-BLK1) Prepared: 10/28/2015 13:05 Analyzed: 11/02/2015 10:18

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Selenium	0.910	U	3.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (5J28026-BS1) Prepared: 10/28/2015 13:05 Analyzed: 11/02/2015 10:22

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	195		2.00	ug/L	200		97	80-120			
Selenium	215		3.00	ug/L	200		108	80-120			
Thallium	202		1.00	ug/L	200		101	80-120			

Matrix Spike (5J28026-MS1) Prepared: 10/28/2015 13:05 Analyzed: 11/02/2015 10:29

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	211		2.00	ug/L	200	2.94	104	75-125			
Selenium	218		3.00	ug/L	200	0.910 U	109	75-125			
Thallium	152		1.00	ug/L	200	0.110 U	76	75-125			

Matrix Spike Dup (5J28026-MSD1) Prepared: 10/28/2015 13:05 Analyzed: 11/02/2015 10:33

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	208		2.00	ug/L	200	2.94	103	75-125	1	20	
Selenium	214		3.00	ug/L	200	0.910 U	107	75-125	2	20	
Thallium	149		1.00	ug/L	200	0.110 U	74	75-125	2	20	QM-07

Post Spike (5J28026-PS1) Prepared: 10/28/2015 13:05 Analyzed: 11/02/2015 10:37

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5J28026 - EPA 3005A

Post Spike (5J28026-PS1) Continued Prepared: 10/28/2015 13:05 Analyzed: 11/02/2015 10:37

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	198		2.00	ug/L	200	2.94	97	80-120			
Selenium	219		3.00	ug/L	200	0.492	109	80-120			
Thallium	153		1.00	ug/L	200	0.0586	76	80-120			QM-08

Batch 5J28032 - EPA 3005A

Blank (5J28032-BLK1) Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 11:57

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	6.80	U	10.0	ug/L							
Barium	1.00	U	10.0	ug/L							
Beryllium	0.100	U	1.00	ug/L							
Cadmium	0.360	U	1.00	ug/L							
Chromium	1.40	U	10.0	ug/L							
Cobalt	1.10	U	10.0	ug/L							
Copper	1.60	U	10.0	ug/L							
Iron	22.0	U	50.0	ug/L							
Lead	3.10	U	10.0	ug/L							
Manganese	1.10	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							
Selenium	5.00	U	10.0	ug/L							
Silver	1.90	U	10.0	ug/L							
Vanadium	1.40	U	10.0	ug/L							
Zinc	3.80	U	10.0	ug/L							

LCS (5J28032-BS1) Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 12:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	193		10.0	ug/L	200		96	80-120			
Barium	200		10.0	ug/L	200		100	80-120			
Beryllium	19.9		1.00	ug/L	20.0		100	80-120			
Cadmium	20.0		1.00	ug/L	20.0		100	80-120			
Chromium	196		10.0	ug/L	200		98	80-120			
Cobalt	198		10.0	ug/L	200		99	80-120			
Copper	193		10.0	ug/L	200		96	80-120			
Iron	980		50.0	ug/L	1000		98	80-120			
Lead	198		10.0	ug/L	200		99	80-120			
Manganese	200		10.0	ug/L	200		100	80-120			
Nickel	201		10.0	ug/L	200		101	80-120			
Selenium	208		10.0	ug/L	200		104	80-120			
Silver	198		10.0	ug/L	200		99	80-120			
Vanadium	193		10.0	ug/L	200		97	80-120			
Zinc	200		10.0	ug/L	200		100	80-120			

Matrix Spike (5J28032-MS1) Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 12:06

Source: C511919-04

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5J28032 - EPA 3005A

Matrix Spike (5J28032-MS1) Continued Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 12:06

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	192		10.0	ug/L	200	6.80 U	96	75-125			
Barium	318		10.0	ug/L	200	107	105	75-125			
Beryllium	20.4		1.00	ug/L	20.0	0.281	100	75-125			
Cadmium	20.4		1.00	ug/L	20.0	0.536	99	75-125			
Chromium	211		10.0	ug/L	200	5.52	103	75-125			
Cobalt	195		10.0	ug/L	200	1.10 U	98	75-125			
Copper	205		10.0	ug/L	200	1.60 U	102	75-125			
Iron	1130		50.0	ug/L	1000	115	102	75-125			
Lead	200		10.0	ug/L	200	3.10 U	100	75-125			
Manganese	486		10.0	ug/L	200	280	103	75-125			
Nickel	210		10.0	ug/L	200	5.65	102	75-125			
Selenium	216		10.0	ug/L	200	5.00 U	108	75-125			
Silver	204		10.0	ug/L	200	3.13	100	75-125			
Vanadium	195		10.0	ug/L	200	1.40 U	98	75-125			
Zinc	217		10.0	ug/L	200	8.08	104	75-125			

Matrix Spike Dup (5J28032-MSD1) Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 12:12

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	195		10.0	ug/L	200	6.80 U	97	75-125	2	20	
Barium	312		10.0	ug/L	200	107	102	75-125	2	20	
Beryllium	20.3		1.00	ug/L	20.0	0.281	100	75-125	0.6	20	
Cadmium	20.3		1.00	ug/L	20.0	0.536	99	75-125	0.2	20	
Chromium	201		10.0	ug/L	200	5.52	98	75-125	5	20	
Cobalt	193		10.0	ug/L	200	1.10 U	97	75-125	1	20	
Copper	204		10.0	ug/L	200	1.60 U	102	75-125	0.6	20	
Iron	1120		50.0	ug/L	1000	115	100	75-125	2	20	
Lead	194		10.0	ug/L	200	3.10 U	97	75-125	3	20	
Manganese	482		10.0	ug/L	200	280	101	75-125	0.9	20	
Nickel	208		10.0	ug/L	200	5.65	101	75-125	0.8	20	
Selenium	210		10.0	ug/L	200	5.00 U	105	75-125	3	20	
Silver	203		10.0	ug/L	200	3.13	100	75-125	0.3	20	
Vanadium	194		10.0	ug/L	200	1.40 U	97	75-125	0.7	20	
Zinc	215		10.0	ug/L	200	8.08	103	75-125	0.8	20	

Post Spike (5J28032-PS1) Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 12:15

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.194		0.0100	mg/L	0.200	-0.0194	97	80-120			
Barium	0.295		0.0100	mg/L	0.200	0.107	94	80-120			
Beryllium	0.0199		0.00100	mg/L	0.0200	0.000281	98	80-120			
Cadmium	0.0200		0.00100	mg/L	0.0200	0.000536	97	80-120			
Chromium	0.195		0.0100	mg/L	0.200	0.00552	95	80-120			
Cobalt	0.192		0.0100	mg/L	0.200	0.000159	96	80-120			
Copper	0.199		0.0100	mg/L	0.200	0.000714	99	80-120			

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5J28032 - EPA 3005A

Post Spike (5J28032-PS1) Continued Prepared: 10/28/2015 13:49 Analyzed: 10/30/2015 12:15

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Iron	1.06		0.0500	mg/L	1.00	0.115	94	80-120			
Lead	0.194		0.0100	mg/L	0.200	0.00124	96	80-120			
Manganese	0.469		0.0100	mg/L	0.200	0.280	95	80-120			
Nickel	0.197		0.0100	mg/L	0.200	0.00565	96	80-120			
Selenium	0.199		0.0100	mg/L	0.200	-0.00555	100	80-120			
Silver	0.196		0.0100	mg/L	0.200	0.00313	96	80-120			
Vanadium	0.190		0.0100	mg/L	0.200	0.000253	95	80-120			
Zinc	0.208		0.0100	mg/L	0.200	0.00808	100	80-120			

Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control

Batch 5L10024 - EPA 3005A

Blank (5L10024-BLK2) Prepared: 12/10/2015 14:13 Analyzed: 12/15/2015 10:41

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nickel	1.80	U	10.0	ug/L							

LCS (5L10024-BS1) Prepared: 12/10/2015 14:13 Analyzed: 12/15/2015 10:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nickel	191		10.0	ug/L	200		96	80-120			

Matrix Spike (5L10024-MS1) Prepared: 12/10/2015 14:13 Analyzed: 12/15/2015 11:02

Source: C514805-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nickel	192		10.0	ug/L	200	7.32	92	75-125			

Matrix Spike Dup (5L10024-MSD1) Prepared: 12/10/2015 14:13 Analyzed: 12/15/2015 11:05

Source: C514805-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nickel	196		10.0	ug/L	200	7.32	94	75-125	2	20	

Post Spike (5L10024-PS1) Prepared: 12/10/2015 14:13 Analyzed: 12/15/2015 11:07

Source: C514805-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nickel	0.200		0.0100	mg/L	0.200	0.00732	96	80-120			

Classical Chemistry Parameters - Quality Control

Batch 5K02003 - NO PREP

Blank (5K02003-BLK1) Prepared & Analyzed: 11/02/2015 13:52

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 5K02003 - NO PREP

Blank (5K02003-BLK1) Continued — Prepared & Analyzed: 11/02/2015 13:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	50000	U	50000	ug/L							

LCS (5K02003-BS1) — Prepared & Analyzed: 11/02/2015 13:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	960		50	mg/L	1000		96	90-110			

Duplicate (5K02003-DUP1) — Prepared & Analyzed: 11/02/2015 13:52

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	1500000		100000	ug/L		1600000			3	20	

Batch 5K02029 - NO PREP

Blank (5K02029-BLK1) — Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:53

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	14000	U	15000	ug/L							

LCS (5K02029-BS1) — Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:54

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	98		15	mg/L	100		98	80-120			

Matrix Spike (5K02029-MS1) — Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:55

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	180000		30000	ug/L	80000	100000	95	80-120			

Matrix Spike Dup (5K02029-MSD1) — Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:56

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	160000		30000	ug/L	80000	100000	69	80-120	13	25	QM-07

Batch 5K06005 - NO PREP

Blank (5K06005-BLK1) — Prepared & Analyzed: 11/06/2015 08:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	2200	U	5000	ug/L							
Sulfate as SO4	2900	U	5000	ug/L							

LCS (5K06005-BS1) — Prepared & Analyzed: 11/06/2015 08:10

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 5K06005 - NO PREP

LCS (5K06005-BS1) Continued Prepared & Analyzed: 11/06/2015 08:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	49000		5000	ug/L	50000		98	90-110			
Sulfate as SO4	48000		5000	ug/L	50000		96	90-110			

Matrix Spike (5K06005-MS3) Prepared & Analyzed: 11/06/2015 08:10

Source: C511919-04RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	910000		50000	ug/L	200000	730000	92	90-110			
Sulfate as SO4	260000		50000	ug/L	200000	87000	88	90-110			QM-07

Matrix Spike (5K06005-MS4) Prepared & Analyzed: 11/06/2015 08:10

Source: C511919-01RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	700000		50000	ug/L	200000	480000	110	90-110			
Sulfate as SO4	240000		50000	ug/L	200000	44000	98	90-110			

Matrix Spike Dup (5K06005-MSD2) Prepared & Analyzed: 11/06/2015 08:10

Source: C511919-04RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	920000		50000	ug/L	200000	730000	97	90-110	51	10	QR-02
Sulfate as SO4	260000		50000	ug/L	200000	87000	89	90-110	112	10	QM-07, QM-11

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-08	Post-digestion spike did not meet method requirements due to confirmed matrix effects (dilution test).
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

www.encolabs.com

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314 Fax (407) 850-6945
4810 Executive Park Court, Suite 111 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210
102-A Woodwinds Industrial Ct. Cary, NC 27511 (919) 467-3090 Fax (919) 467-3515

Page 1 of 1

Client Name: Golder Associates, Inc. (GO007)	Project Number: 0739-603515.100
Address: 5B Oak Branch Drive	Project Name/Desc: WI- Red Rock
City/ST/Zip: Greensboro, NC 27407	PO # / Billing Info: 2015: 914360
Tel: (336) 852-4903 Fax: (336) 852-4904	Reporting Contact: Dusty Reedy
Sampler(s) Name, Affiliation (Print): B. DRAPER / T. MARTINEZ	Billing Contact: Francine Judd
Sampler(s) Signature: [signature]	Site Location / Time Zone: Holly Springs, NC / EST

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder: C511919

Requested Analyses / Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8260B Appendix 1,8260B Extended	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Fe,Mn,Ni,Pb,Sb,Se,Se,Tl,V,Zn	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Se,Tl,V,Zn	Alkalinity 310.2,Chloride 300,TDS SM2540C	Hg	Sulfate 300					Sample Comments
	9228-MW2T	10/26/15	1317	G	GW	5	X	X		X	X	X					NC C+D List
	9228-MW3	10/26/15	1216	G	GW	5	X	X		X	X	X					(Hg, Mn, Fe, Chloride)
	9228-MW4	10/26/15	1404	G	GW	5	X	X		X	X	X					(Sulfate, Alkalinity,
	9228-MW5 (ms/msd)	10/26/15	1502	G	GW	8	X	X		X	X	X					TDS + THF)
	9228-MW6T	10/26/15	1541	G	GW	5	X	X		X	X	X					"
	9228-MW10	10/26/15	1013	G	GW	5	X	X		X	X	X					"
	9228-MW11	10/26/15	1110	G	GW	5	X	X		X	X	X					"
	9228-MW14	10/26/15	1140	G	GW	5	X	X		X	X	X					"
	~~9228-SW2~~				~~SW~~	~~4~~	~~X~~		~~X~~								"
	~~9228-SW3~~				~~SW~~	~~4~~	~~X~~		~~X~~								DRY NO SAMPLE
	9228-Field Blank	10/26/15	1551	G	WA	4	X	X			X						DRY NO SAMPLE
	9228-Trip Blank	—	—	G	WA	2	X										NC App E + Hg, Mn, Fe, THF

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By: [signature]	Date/Time: 10/27/15 0800	Received By: [signature]	Date/Time: 10-27-15 1200
Comments/Special Reporting Requirements: Please provide "Level 2" data report.		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: 2.0c		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

Sample Preservation Verification

ENCO Cary

Work Order:	C511919	Project:	WI- Red Rock
Client:	Golder Associates, Inc. (GO007)	Project #:	0739-603515.100
Logged In:	27-Oct-15 12:52	Logged By:	John C King

C511919-01

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-02

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-03

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-04

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		
C	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-05

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-06

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-07

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-08

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
B	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511919-09

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
A	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

Sample Preservation Verification

ENCO Cary

Work Order:	C511919	Project:	WI- Red Rock
Client:	Golder Associates, Inc. (GO007)	Project #:	0739-603515.100
Logged In:	27-Oct-15 12:52	Logged By:	John C King

	Reagent Name	ID		Reagent Name	ID		Reagent Name	ID
1			3			5		
2			4			6		

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

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102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

Client Name	Golder Associates, Inc. (GO007)
Project Number	0739-603515.100
Address	5B Oak Branch Drive
Project Name/Desc	WI- Red Rock
City/ST/Zip	Greensboro, NC 27407
PO # / Billing Info	2015: 914360
Tel	(336) 852-4903
Fax	(336) 852-4904
Reporting Contact	Dusty Reedy
Sampler(s) Name, Affiliation (Print)	B. DRAPER / T. MARTINEZ
Billing Contact	Francine Judd
Sampler(s) Signature	
Site Location / Time Zone	Holly Springs, NC / EST

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder

C511919

Requested Analyses / Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8260B Appendix 1,8260B Extended	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Fe,Mn,Ni,Pb,Sb,Se,Sn,Tl,V,Zn	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Sn,Tl,V,Zn	Alkalinity 310.2,Chloride 300,TDS SM2540C	Hg	Sulfate 300					Sample Comments
	9228-MW2T	10/26/15	1317	G	GW	5	X	X		X	X	X					NC C+D List
	9228-MW3	10/26/15	1216	G	GW	5	X	X		X	X	X					(Hg, Mn, Fe, Chloride)
	9228-MW4	10/26/15	1404	G	GW	5	X	X		X	X	X					(Sulfate, Alkalinity,
	9228-MW5 (ms/msd)	10/26/15	1502	G	GW	8	X	X		X	X	X					TDS + THF)
	9228-MW6T	10/26/15	1541	G	GW	5	X	X		X	X	X					"
	9228-MW10	10/26/15	1013	G	GW	5	X	X		X	X	X					"
	9228-MW11	10/26/15	1110	G	GW	5	X	X		X	X	X					"
	9228-MW14	10/26/15	1140	G	GW	5	X	X		X	X	X					"
	~~9228-SW2~~				~~SW~~	~~4~~	~~X~~		~~X~~								DRY NO SAMPLE
	~~9228-SW3~~				~~SW~~	~~4~~	~~X~~		~~X~~								DRY NO SAMPLE
	9228-Field Blank	10/26/15	1557	G	WA	4	X	X			X						NC App E + Hg, Mn, Fe,
	9228-Trip Blank	—	—	G	WA	2	X										THF

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time 10/27/15 0800	Received By	Date/Time 10-27-15 1200
Comments/Special Reporting Requirements: 1.) Please provide "Level 2" data report.		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: 2.0°C		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

WORK ORDER

Printed: 11/9/2015 5:19:23PM

C511919

ENCO Cary

Sample Receipt Conditions

Client:	**Golder Associates, Inc. (GO007)**	**Lab Project Mgr:**	**Stephanie Franz**
Project:	**WI- Red Rock**	**Project Number:**	**0739-603515.100**
PO #:	**2015: 914360**		

Report To:

Golder Associates, Inc. (GO007)
Dusty Reedy
5B Oak Branch Drive
Greensboro, NC 27407
Phone: (336) 852-4903
Fax: (336) 852-4904

Invoice To:

Waste Industries - Red Rock Disposal (WA023)
Francine Judd
7130 New Landfill Drive
Holly Springs, NC 27540
Phone :(919) 557-9583
Fax: (919) 557-9523

Received By:	John C King	Date Received:	27-Oct-15 12:00
Logged In By:	John C King	Date Logged In:	27-Oct-15 12:52

Work Order Comments:

C-123 received at 2.0°C

Containers Intact	Y	Containers Properly Preserved	Y	Proper Containers Received	Y	All Samples in PreLog Received	N	COC/Labels Agree	Y
Custody Seals Intact	Y	Volatile Containers Preserved	Y	Volatile Containers Headspace Free	Y	Aqueous Samples Checked for Residual Cl	N	Received On Ice	Y
Temperature Corrected	Y								

GOLDER ASSOCIATES INC.
QUALITY ASSURANCE & QUALITY CONTROL
LABORATORY DATA REVIEW

Project Name: Waste Industries – Red Rock C&D Landfill

Project Reference Number: 0739603515.100

Sampling Event Date: October 26, 2015

Review Date: November 10, 2015 *Initials:* AS

Report #: C511919

Person(s) performing the review are to initial each item on this form as acknowledgement of data acceptance, or as acknowledgement of a review issue. In the case of the latter, a brief explanation should follow the applicable item.

Golder Associates Inc. has reviewed the laboratory certificates of analysis, chain-of-custody form, and laboratory provided sample group quality assurance and quality control data for the above referenced sample group to identify potential bias or inaccuracy, in general accordance with the following United States Environmental Protection Agency documents:

- Region III Modifications to Functional Guidelines for Organic Data Review Multi-Media, Multi-Concentration, September 1994;
- Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, April 1993; and
- Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, July 1998.

COMPLIANCE ANALYTE LIST(S) (check all that apply)

X NC C & D List (*GW*)

X NC Appendix I (*SW*)

_____ NC Appendix I + Detects

_____ NC Appendix II

_____ NC Subtitle D Leachate List

_____ NC Surface Water Compliance List

Other: _____

1.0 CHAIN OF CUSTODY (COC) REVIEW

AS COC was properly signed by all parties.

AS Correct project name and number are on the form.

AS Sample receipt condition at laboratory was acceptable.

AS Each sample and blank submitted for analysis appears in the report.

- ***Samples SW-2 and SW-3 were not submitted for analysis, as the sources were dry at the time of collection.***

2.0 SAMPLE HOLDING TIMES

AS Holding times for extraction and/or analysis were met for each analytical Method (see below for reference).

Review Criteria		
Method	**Analytes**	**Holding Time**
SW-846 Method 8260	VOCs	14 days
SW-846 Methods 8270, 8080, 8081, 8082, and 8151	SVOCs, PCBs, pesticides and herbicides	7 days for extraction, 40 days from extraction for analysis
SW-846 Methods 6000 and 7000 Series	Metals except mercury	6 months (no temperature requirements)
SW-846 Method 7470	Mercury	28 days
SW-846 Method 376.1	Sulfide	7 days
EPA Method 335.2	Cyanide	14 days
EPA Method 300	Chloride	28 days
EPA Method 300	Nitrate/Sulfate	48 hours/28 days
EPA Method 405.1	BOD	48 hours
EPA Method 410.4	COD	28 days
EPA Method 365.4	Phosphorous	28 days

3.0 LABORATORY QUALITY CONTROL REVIEW

AS Laboratory analyzed at least one internal blank for each method, where applicable.

AS Laboratory blank is interference-free.

AS Surrogate recoveries are provided for each analytical method, where applicable.

AS Surrogate recoveries for each method are within the acceptable limits (i.e., at least 50% of the surrogates were within range).

AS MS/MSD/LCS data results are provided for each analytical method.

AS MS/MSD/LCS recoveries for each method are within the acceptable limits (i.e., at least 1 of the 3 were within range).

- ***The spike recovery of 1,1-Dichloroethene was outside of control limits for the 8260B MS sample. The QC batch was approved based on acceptable LCS recovery of this analyte.***
- ***The spike recovery of Thallium was outside of control limits for the 6020A MSD and Post Spike samples. The QC batch was approved based on acceptable LCS recovery of this element.***
- ***The spike recoveries of Alkalinity and Sulfate were outside of control limits for the MS and/or MSD samples, and precision between duplicate spikes of Chloride and Sulfate exceeded acceptance criteria. The QC batches were approved based on acceptable LCS recovery of these analytes.***

4.0 ANALYTE LISTS/METHODS

AS The proper number of constituents are present for each analyte list as identified above (including detects where applicable).

AS Proper EPA SW-846 analytical methods were used for analysis.

5.0 DATA REPORTING

AS All analytical reporting associated with the event was performed by the contracted lab.

AS Trip, field and/or equipment, and laboratory blank results have all been reported. All detects for blanks are listed below by constituent. All laboratory method blanks, if any, have been 'flagged' with a 'B' where detected in other samples as appropriate and a laboratory narrative was provided. If the sample was flagged by the laboratory and is not within 5X of the concentration in the blank (or 10X for commonly detected laboratory contaminants-acetone, methylene chloride and phthalates), list below with explanation if flags should be removed. If flags need to be added for samples, also list below.

AS It is clear from the laboratory report that samples have or have not been diluted during analysis, and if the samples have been diluted, the result is reported as a multiple of the dilution (e.g., a sample diluted 10x resulting in an analytical detection of 1.0 should be reported as 10). Those that have been diluted are listed below with the dilution factor.

- ***Chloride:***
  - ***MW-2T (x10), MW-3 (x20), MW-5 (x10), MW-6T (x25), MW-10 (x5)***
- ***Total Alkalinity:***
  - ***MW-2T (x5), MW-3 (x3), MW-5 (x10), MW-6T (x4), MW-10 (x4), MW-11 (x3), MW-14 (x2)***
- ***TDS:***
  - ***MW-6T (x2)***

AS The report provides the reporting limit for each constituent.

AS The results were reported at or below their proper reporting limits (e.g., NC Solid Waste Section approved PQLs). Those that are not reported correctly are listed below (by constituent) with the proper reporting limit listed beside them. State if the reporting limit error is due to dilutions.

AS No inorganic or organic constituents were reported above their respective NC 2L Drinking Water Standards or SWS Groundwater Protection Standards in wells or field/equipment/trip blanks, or above applicable surface water standards in surface water monitoring points.

- ***Antimony*** ***(GWPS = 1 ug/L)***
  - ***MW-5 @ 2.94 ug/L (J)***
- ***Barium*** ***(NC 2L = 700 ug/L)***
  (MCL = 2000 ug/L)
  - ***MW-3 @ 2220 ug/L***
  - ***MW-6T @ 2440 ug/L***
  - ***MW-10 @ 1180 ug/L***
- ***Chromium*** ***(NC 2L = 10 ug/L)***
  - ***MW-3 @ 13.5***
- ***Nickel*** ***(NC 2L = 100 ug/L)***
  - ***MW-6T = 124 ug,L***
- ***Vanadium*** ***(SWS GPS = 0.3 ug/L)***
  - ***MW-3 @ 21.9 ug/L (J)***
  - ***MW-4 @ 2.85 ug/L (J)***
  - ***MW-14 @ 9.74 ug/L (J)***
- ***Iron*** ***(NC 2L & MCL = 300 ug/L)***
  - ***MW-4 @ 981 ug/L***
  - ***MW-6T @ 1090 ug/L***
- ***Manganese*** ***(NC 2L & MCL = 50 ug/L)***
  - ***MW-2T @ 57.6 ug/L***
  - ***MW-4 @ 58.8 ug/L***
  - ***MW-5 @ 280 ug/L***
  - ***MW-6T @ 1780 ug/L***
  - ***MW-10 @ 1130 ug/L***
  - ***MW-11 @ 57.5 ug/L***
  - ***MW-14 @ 77.9 ug/L***
- ***Chloride*** ***(NC 2L & MCL = 250 mg/L)***
  - ***MW-2T @ 480 mg/L***
  - ***MW-3 @ 1700 mg/L***
  - ***MW-5 @ 730 mg/L***
  - ***MW-6T @ 2300 mg/L***
  - ***MW-10 @ 360 mg/L***
- ***TDS*** ***(NC 2L = 1000 mg/L)***
  - ***MW-2T @ 1200 mg/L***
  - ***MW-3 @ 3600 mg/L***
  - ***MW-5 @ 1600 mg/L***
  - ***MW-6T @ 4900 mg/L***

AS No inorganic or organic constituents were detected in a well or surface water point at quantifiable concentrations outside of their historical range (more than 5X previous concentrations or first-time detections).

AS Other report issues/Communications with laboratory/etc.:

APPENDIX C

STATISTICAL EVALUATION WORKSHEETS & SUMMARY TABLE

Summary of Statistical Analysis
Red Rock Disposal. LLC C&D Landfill, Permit No. 92-28
Wake County, North Carolina

October 2015												
Detected Monitoring Constituent/Analytes	Reporting Units	Statistical Evaluation Method		Prediction Interval	Downgradient Monitoring Wells and Concentrations							
					MW-2T	MW-3	MW-4	MW-5	MW-6T		MW-11	MW-14
Barium	ug/L	Interwell	Upper Prediction Interval	2265	35.5 J	2220	19.3 J	107	2440		15.4 J	70.3 J
		MW-6T Intrawell	Upper Tolerance Interval	3203								
Chromium	ug/L	Interwell	Nonparametric Prediction Interval	1.40	ND	13.5	ND	5.52 J	2.96 J		ND	ND
		MW-3 Intrawell	Nonparametric Prediction Interval	26.4								
Nickel	ug/L	Interwell	Nonparametric Prediction Interval	1.80	ND	44.7 J	ND	5.65 J	124	68.0*	ND	ND
		MW-6T Intrawell	Nonparametric Prediction Interval	50.0								
Iron	ug/L	Interwell	Nonparametric Prediction Interval	457	283 J	150 J	981	115 J	1090		59.1 J	276 J
		MW-4 Intrawell	Upper Tolerance Interval	19047								
		MW-6T Intrawell	Upper Tolerance Interval	2323								
Manganese	ug/L	Interwell	Upper Prediction Interval	2072	57.6	14.1 J	58.8	280	1780		57.5	77.9
Chloride	mg/L	Interwell	Upper Prediction Interval	900	480	1700	5.5	730	2300		9.9	30
		MW-3 Intrawell	Upper Tolerance Interval	2040								
		MW-6T Intrawell	Upper Tolerance Interval	2407								
Total Dissolved Solids	mg/L	Interwell	Upper Prediction Interval	1467	1200	3600	88	1600	4900		320	320
		MW-3 Intrawell	Upper Tolerance Interval	3786								
		MW-5 Intrawell	Upper Tolerance Interval	3998								
		MW-6T Intrawell	Upper Tolerance Interval	5268								

Notes:
1. Shaded values represent apparent statistically significant increases (SSIs) over background concentrations.
2. Statistical worksheets are provided as Appendix C.
3. ug/L = micrograms per liter
4. ND = Not Detected
5. J = estimated concentration below the Solid Waste Section Limit
6. * = dissolved barium concentration

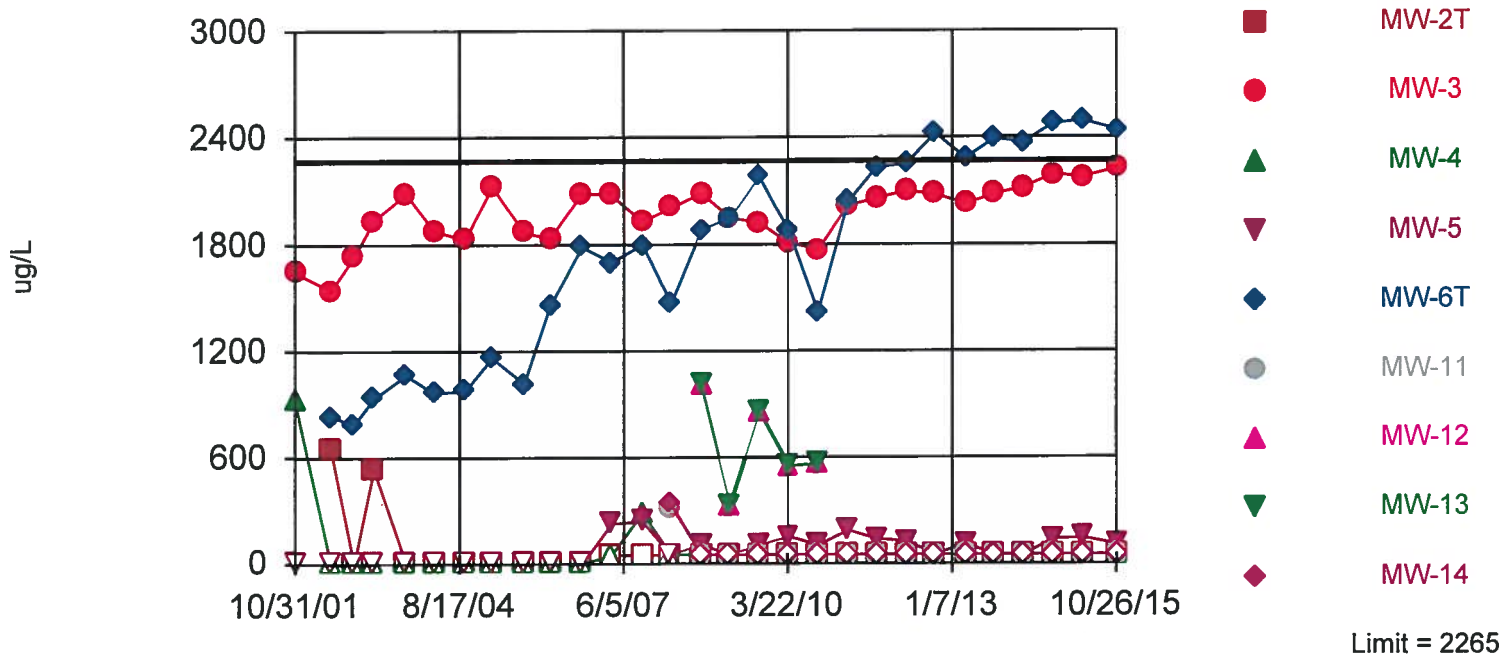
Golder Associates

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-6T

Prediction Limit

Interwell Parametric



Background Data Summary (after Cohen`s Adjustment): Mean=592.2, Std. Dev.=674.5, n=34, 29.41% NDs. Insufficient data to test for seasonality; data will not be deseasonalized. Report alpha = 0.08648. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit.

Constituent: Barium Analysis Run 12/2/2015 1:32 PM

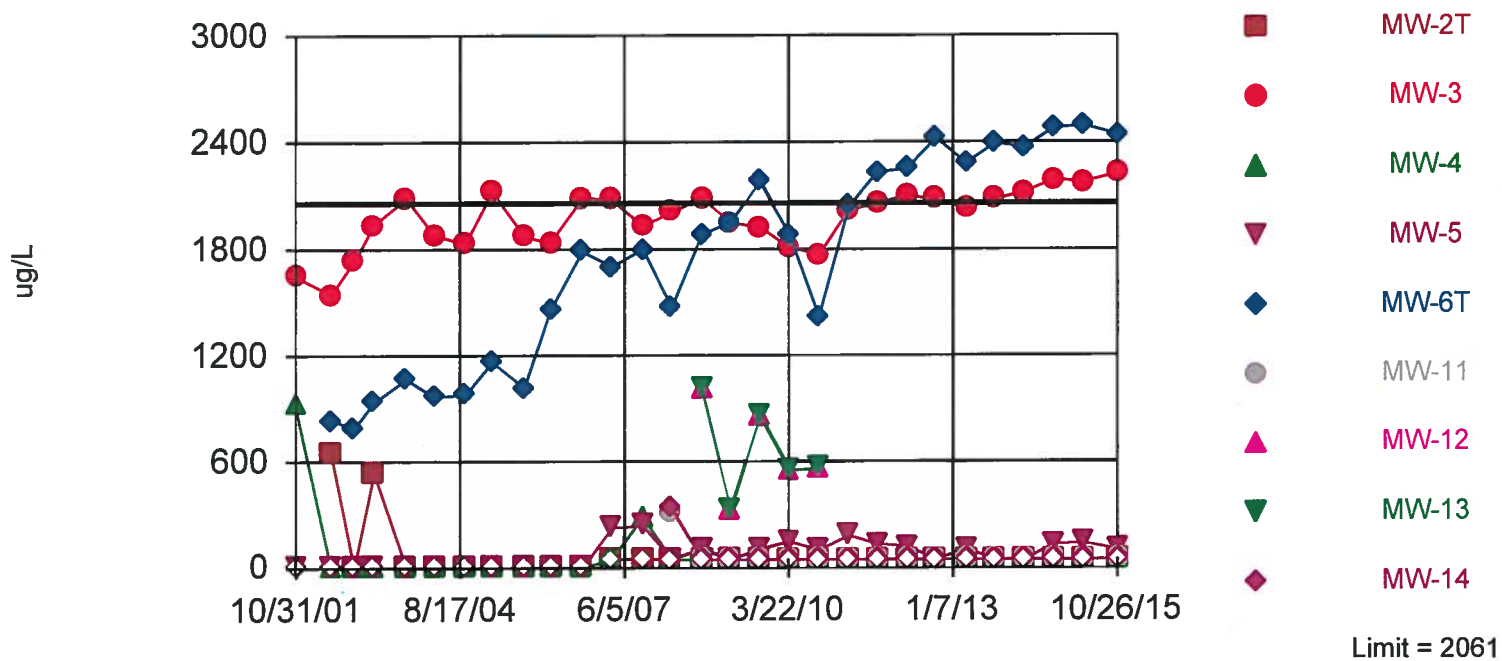
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-3, MW-6T

Tolerance Limit

Interwell Parametric



95% coverage. Most recent observation is compared with limit. Background Data Summary (after Cohen`s Adjustment): Mean=592.2, Std. Dev.=674.5, n=34, 29.41% NDs. Report alpha = 0.05.

Constituent: Barium Analysis Run 12/2/2015 1:40 PM

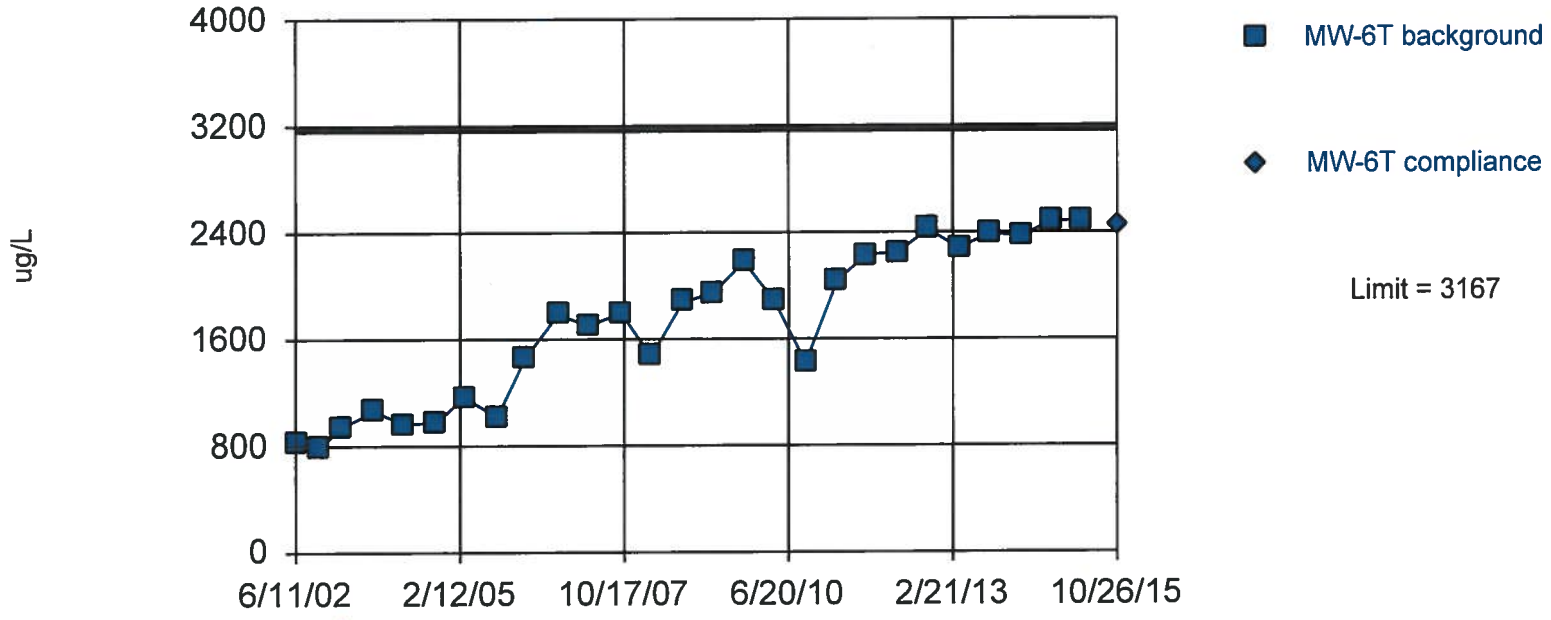
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1712, Std. Dev.=576.6, n=27. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: Barium Analysis Run 12/2/2015 1:41 PM

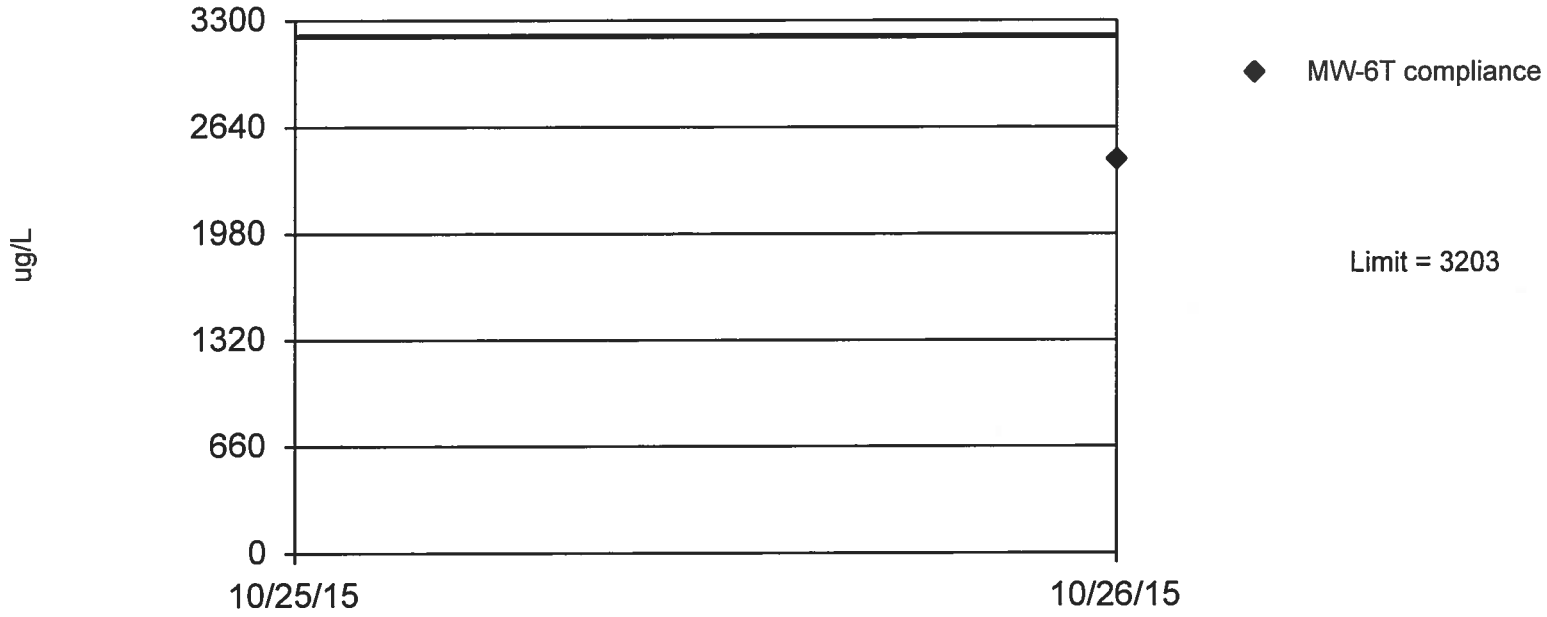
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=1712, Std. Dev.=576.6, n=27. Report alpha = 0.01.

Constituent: Barium Analysis Run 12/2/2015 1:43 PM

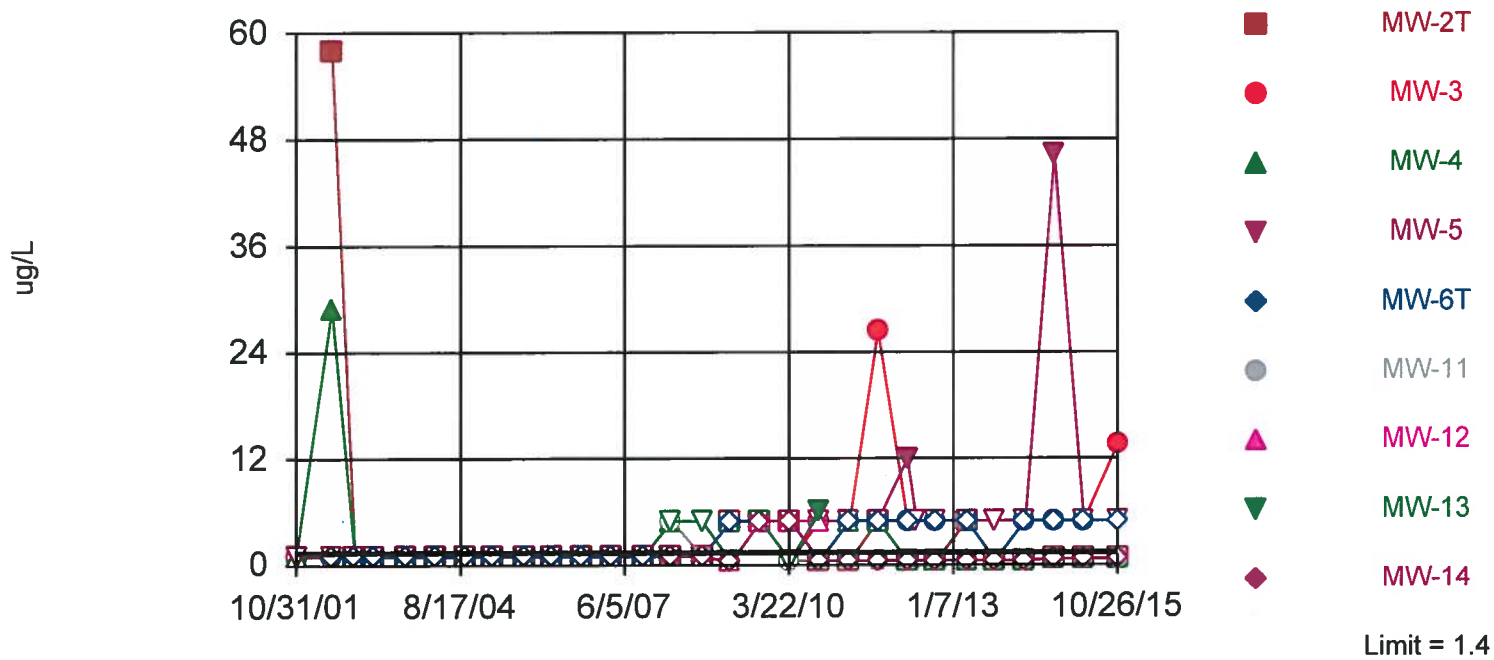
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-3, MW-5, MW-6T, MW-12. MW-13

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 34) were censored; limit is most recent reporting limit. Report alpha = 0.2093. Individual comparison alpha = 0.02576. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Chromium Analysis Run 12/2/2015 1:55 PM

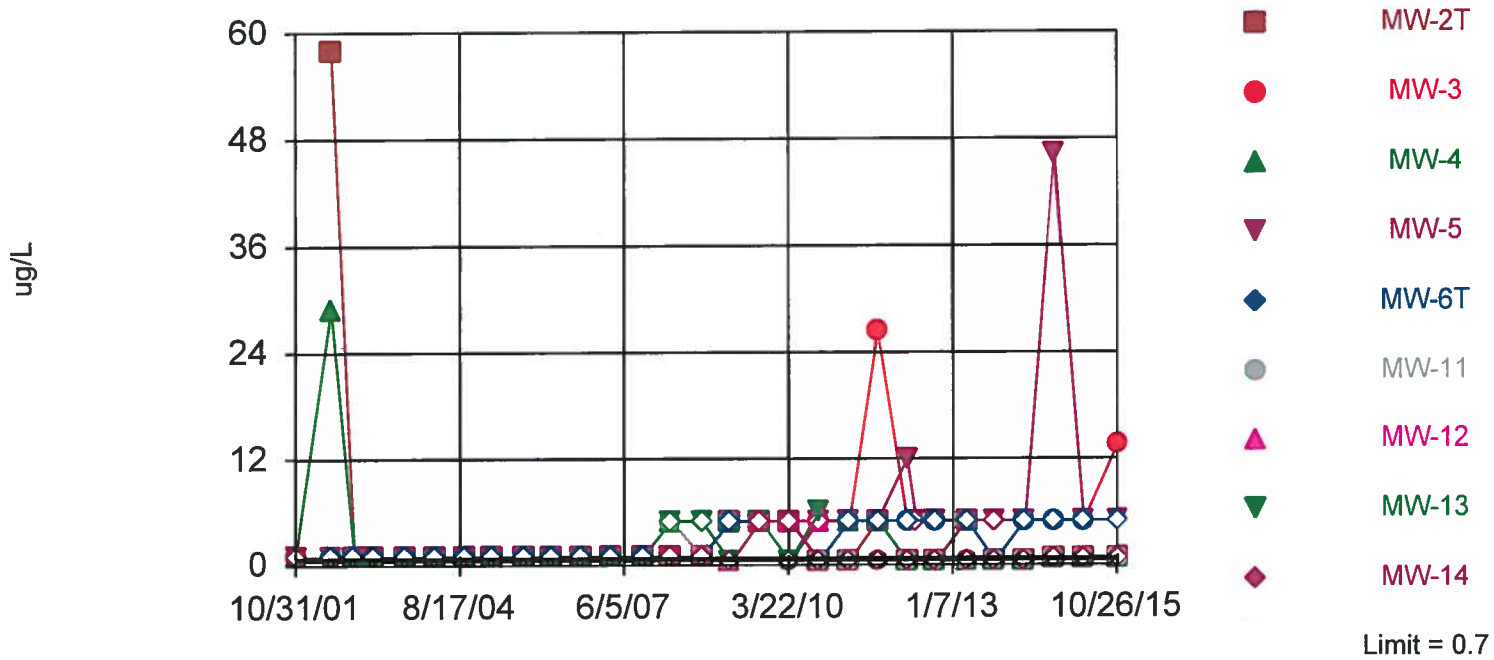
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-3, MW-5, MW-6T, MW-12. MW-13

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. All background values were censored; limit is most recent reporting limit. 87.3% coverage at alpha=0.01; 91.6% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1748.

Constituent: Chromium Analysis Run 12/2/2015 1:56 PM

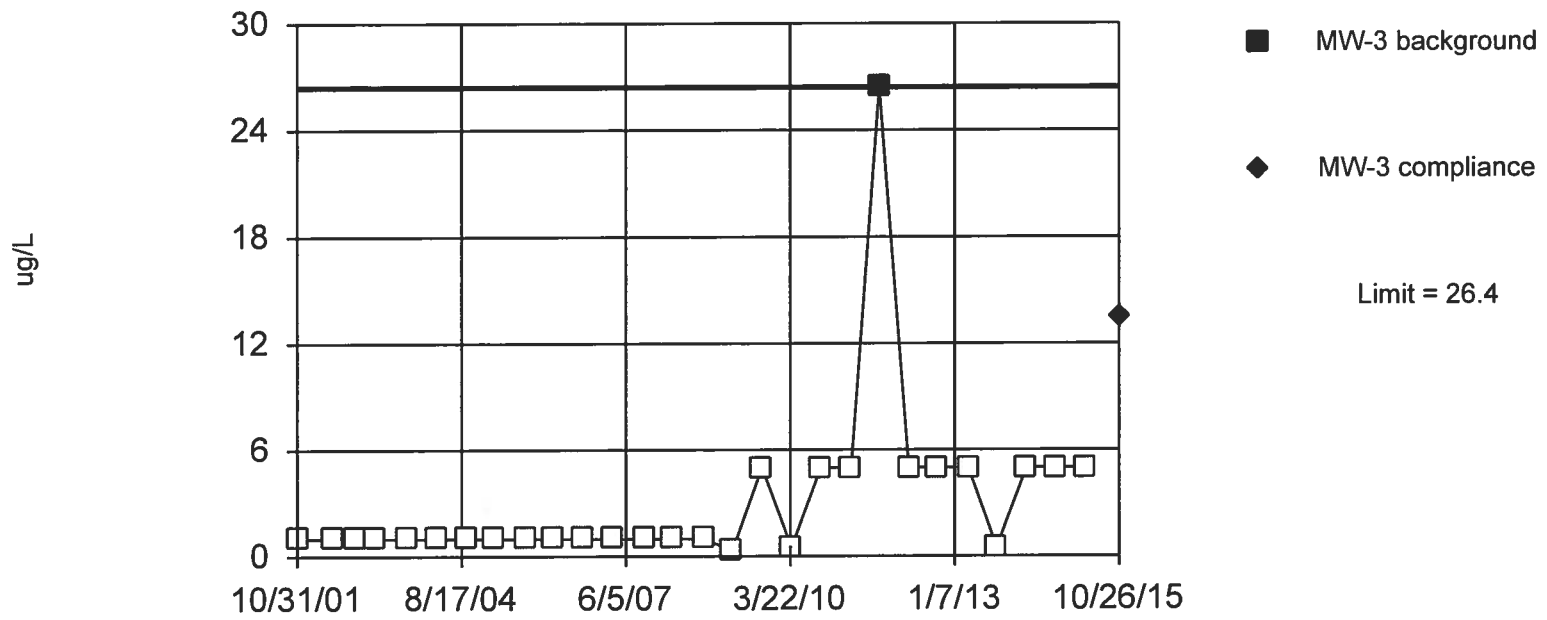
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 28 background values. 96.43% NDs. Report alpha = 0.03448. Most recent point compared to limit. Insufficient data to test for seasonality: data were notdeseasonalized.

Constituent: Chromium Analysis Run 12/2/2015 2:00 PM

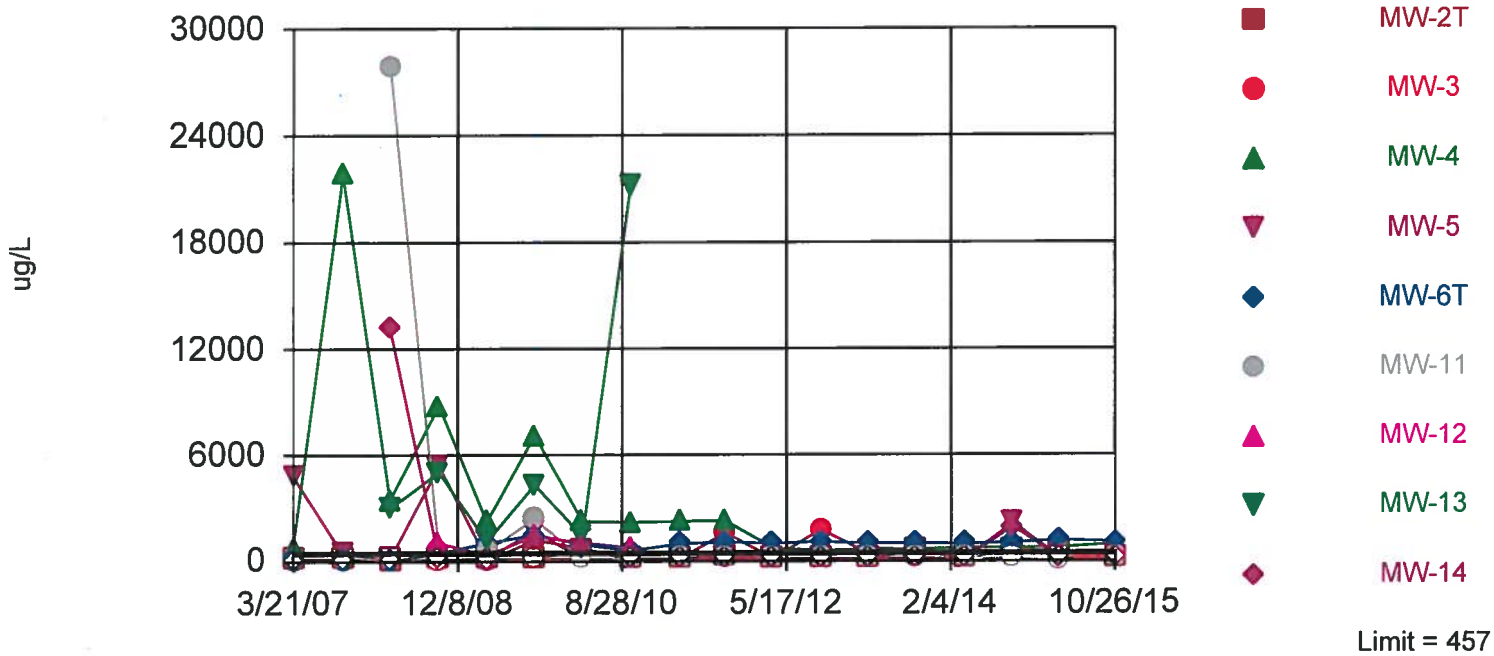
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-4, MW-6T, MW-12, MW -13

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 18 background values. 94.44% NDs. Report alpha = 0.3333. Individual comparison alpha = 0.04405. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Iron Analysis Run 12/2/2015 1:44 PM

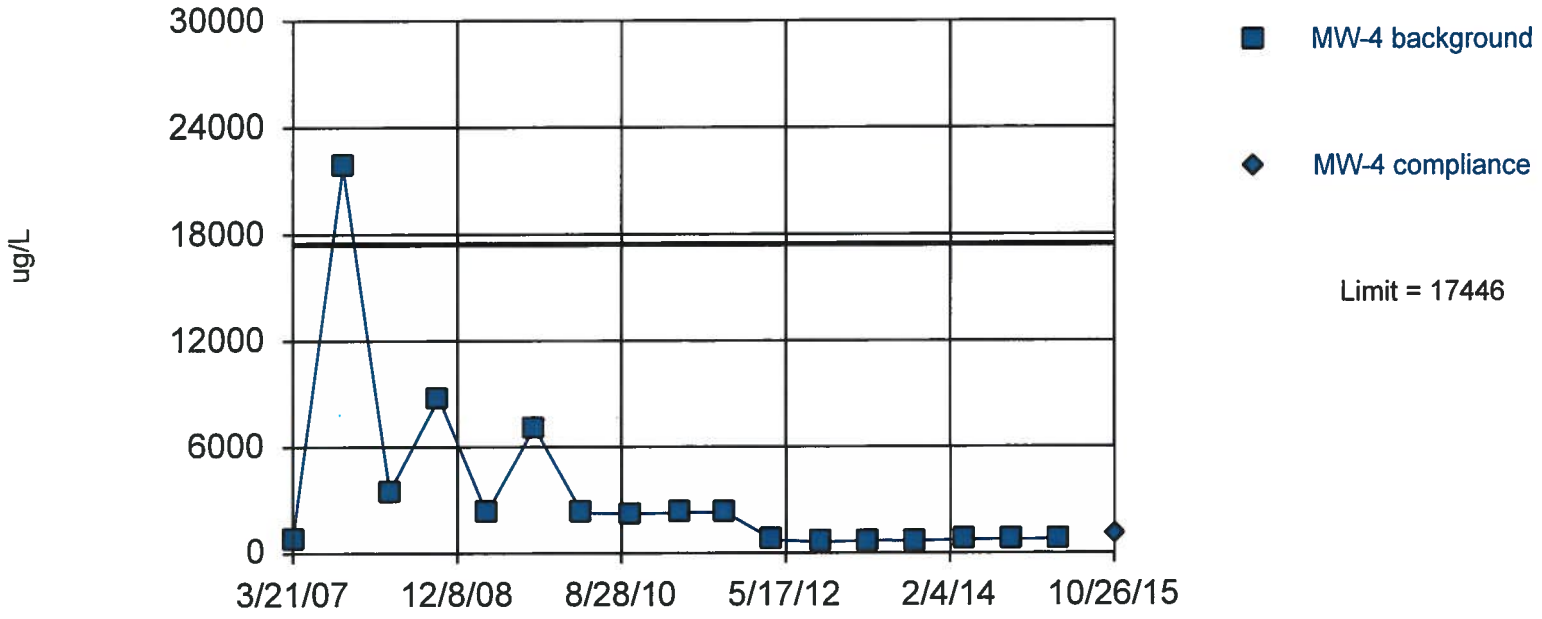
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3421, Std. Dev.=5275, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: Iron Analysis Run 12/2/2015 1:49 PM

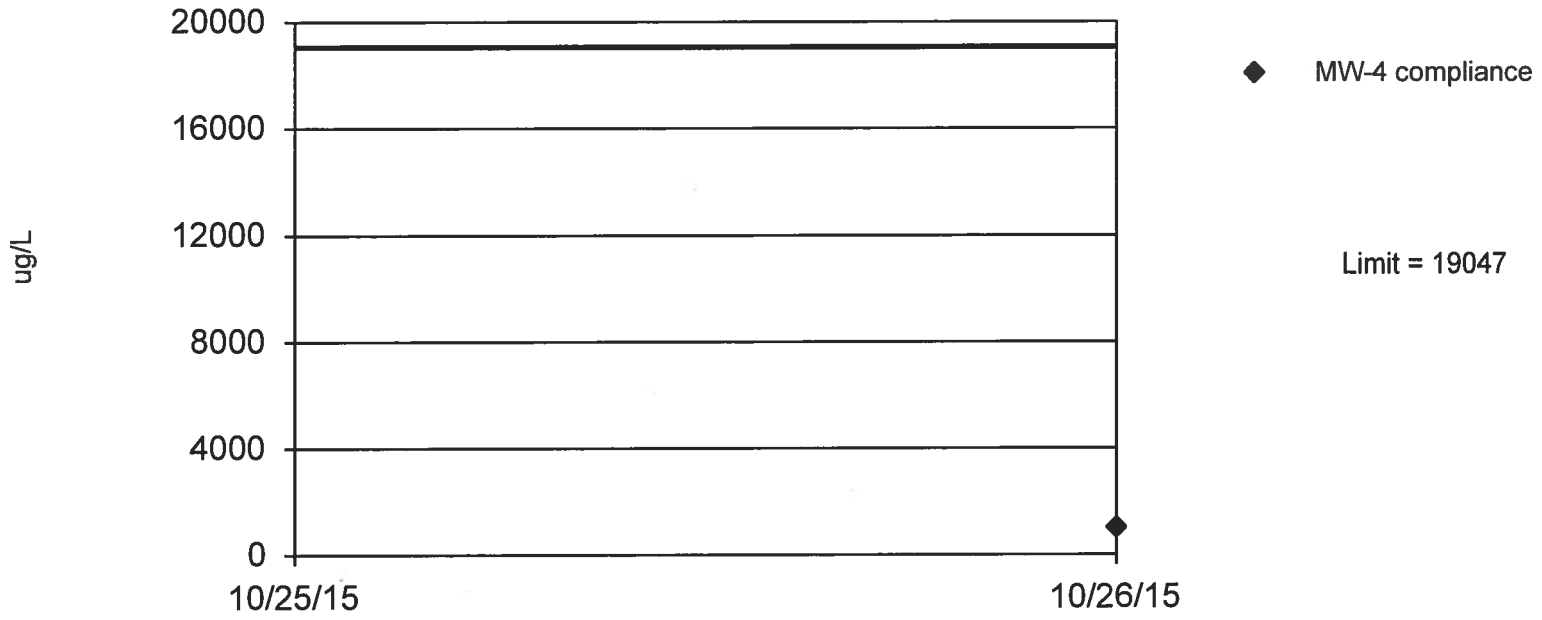
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=3421, Std. Dev.=5275, n=17. Report alpha = 0.01.

Constituent: Iron Analysis Run 12/2/2015 1:50 PM

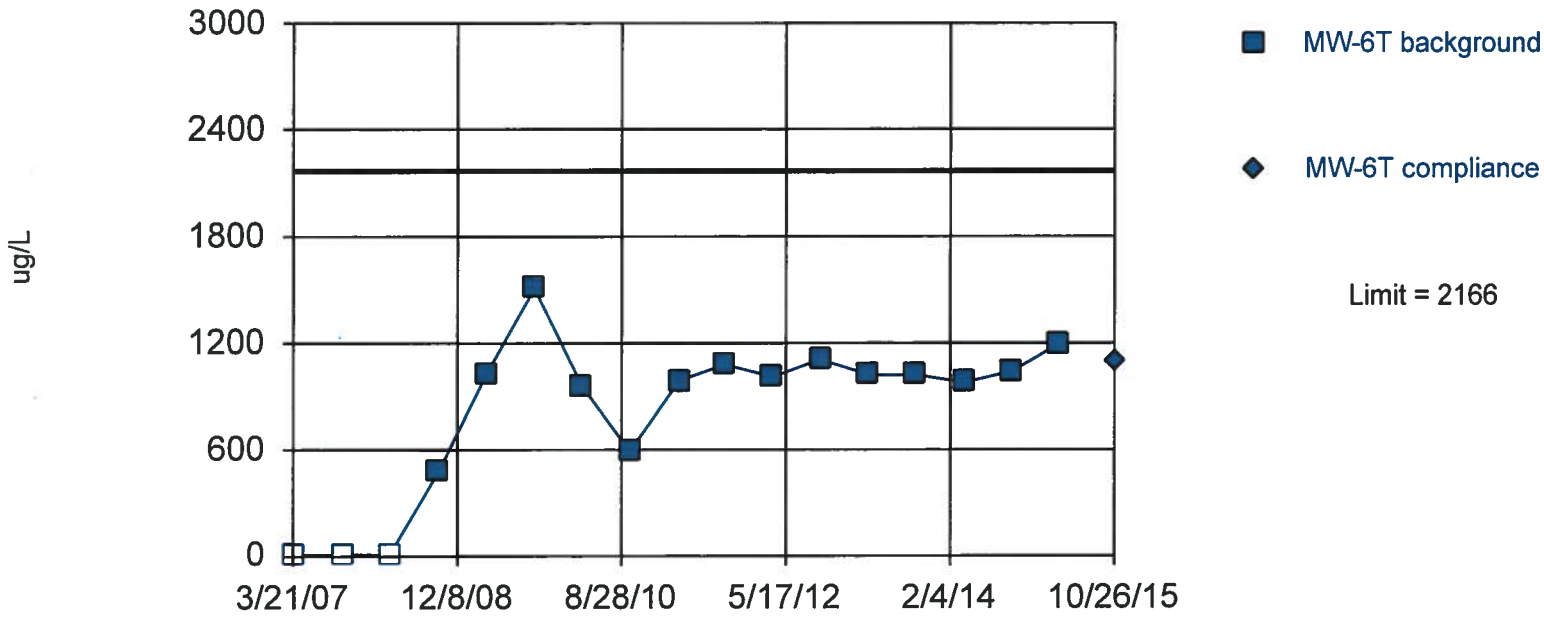
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Cohen`s Adjustment): Mean=787.2, Std. Dev.=518.5, n=17, 17.65% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: Iron Analysis Run 12/2/2015 1:51 PM

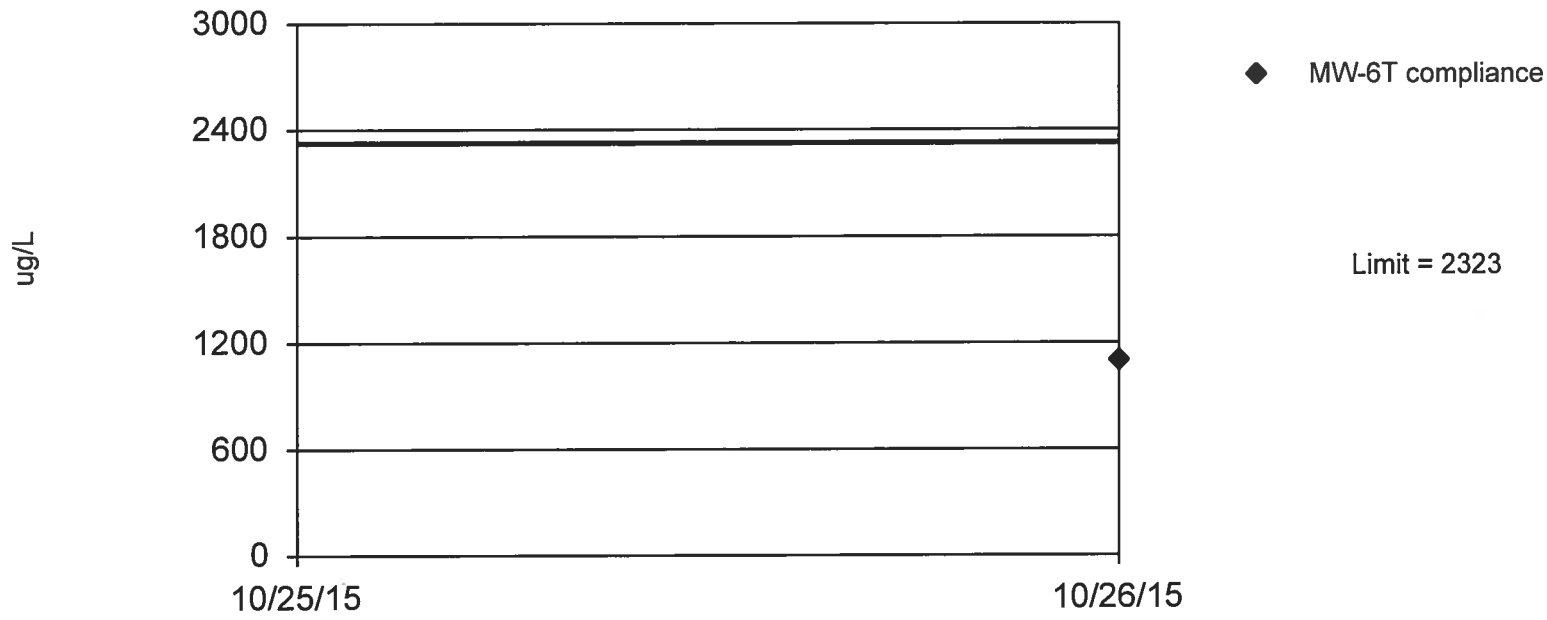
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary (after Cohen`s Adjustment): Mean=787.2, Std. Dev.=518.5, n=17, 17.65% NDs. Report alpha = 0.01.

Constituent: Iron Analysis Run 12/2/2015 1:52 PM

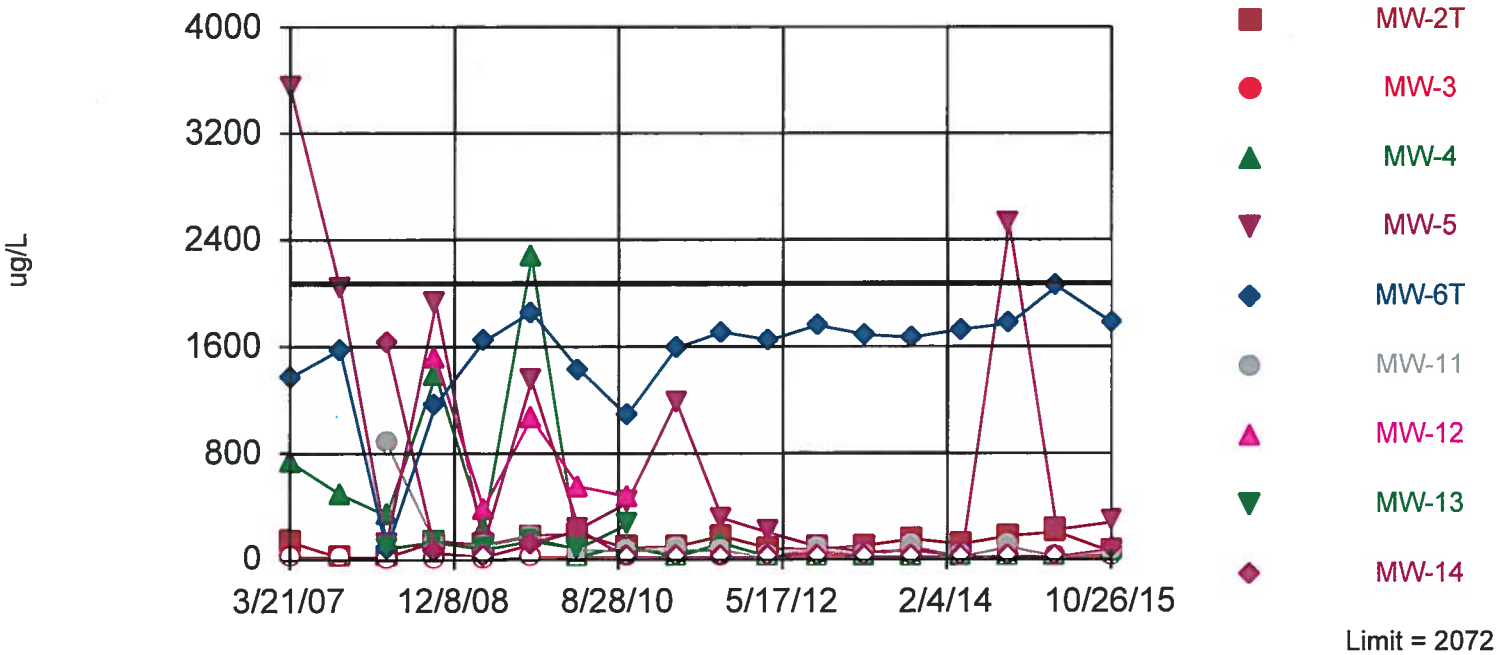
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=688.7, Std. Dev.=524.4, n=18. Insufficient data to test for seasonality; data will not be deseasonalized. Report alpha = 0.08648. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit.

Constituent: Manganese Analysis Run 12/2/2015 1:53 PM

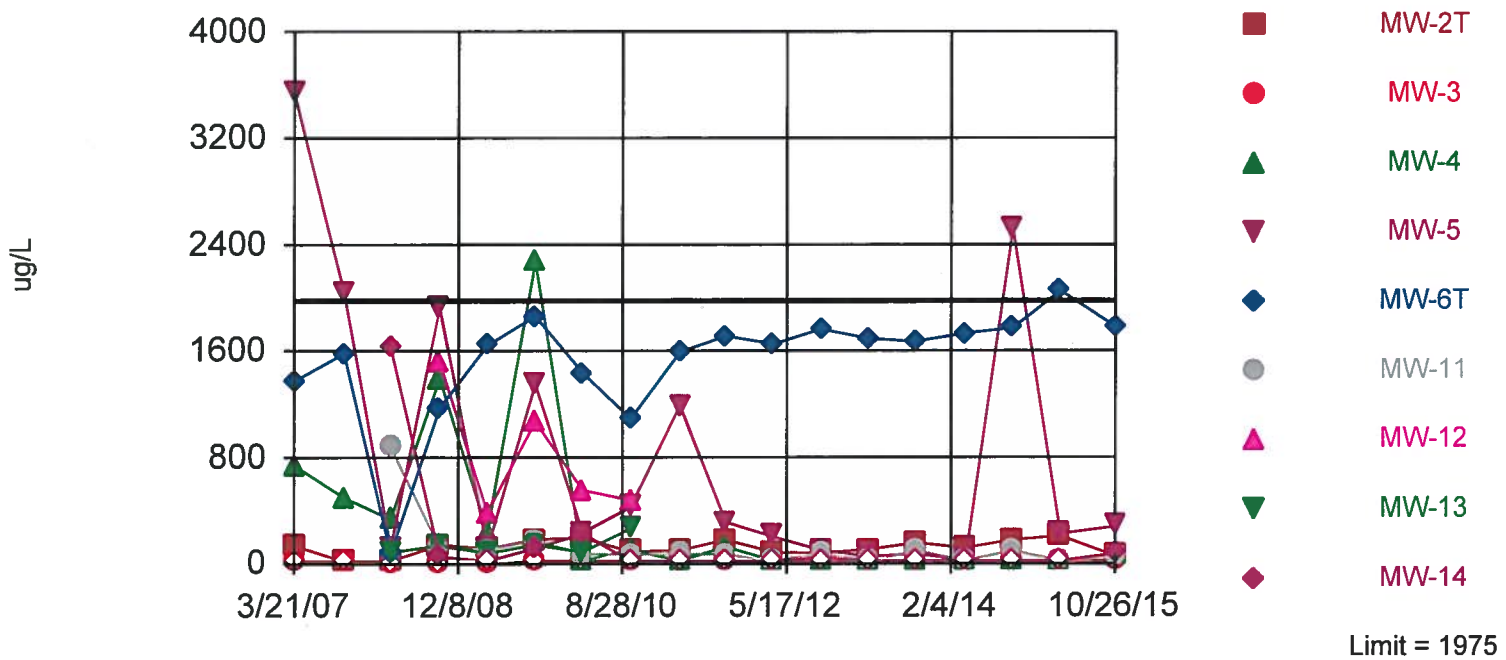
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Parametric



95% coverage. Most recent observation is compared with limit. Background Data Summary: Mean=688.7, Std. Dev.=524.4, n=18. Report alpha = 0.05.

Constituent: Manganese Analysis Run 12/2/2015 1:54 PM

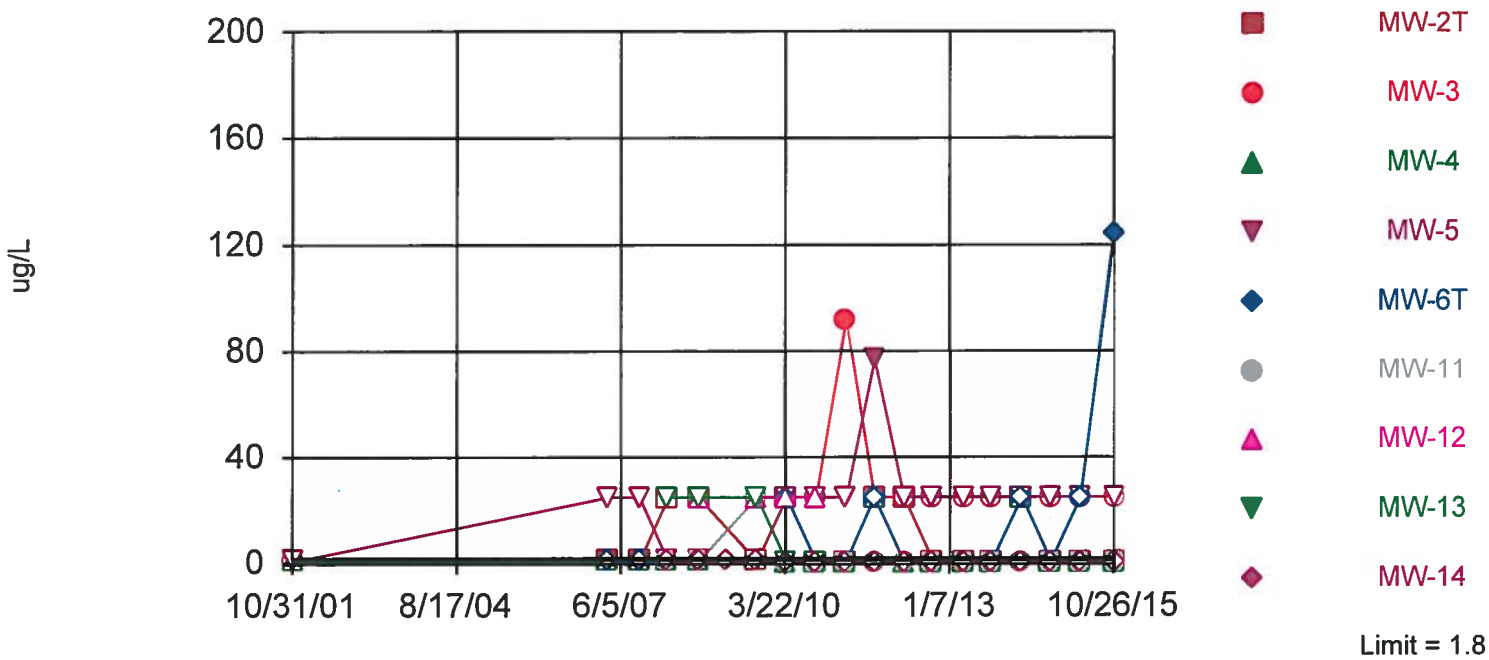
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-3, MW-5, MW-6T, MW-12

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 18) were censored; limit is most recent reporting limit. Report alpha = 0.3333. Individual comparison alpha = 0.04405. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Nickel Analysis Run 12/2/2015 2:01 PM

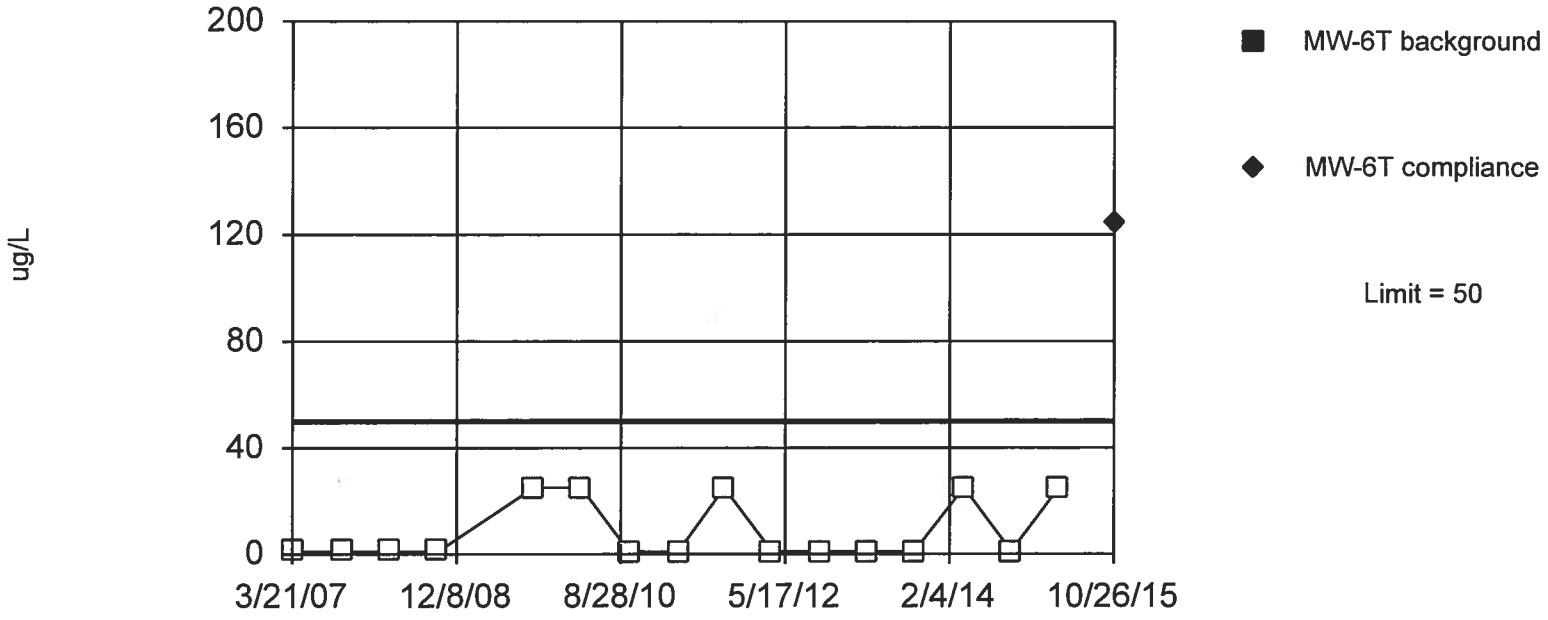
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 16) were censored; limit is most recent reporting limit. Report alpha = 0.05882. Most recent point compared to limit. Insufficient data totest for seasonality: data were not deseasonalized.

Constituent: Nickel Analysis Run 12/2/2015 2:05 PM

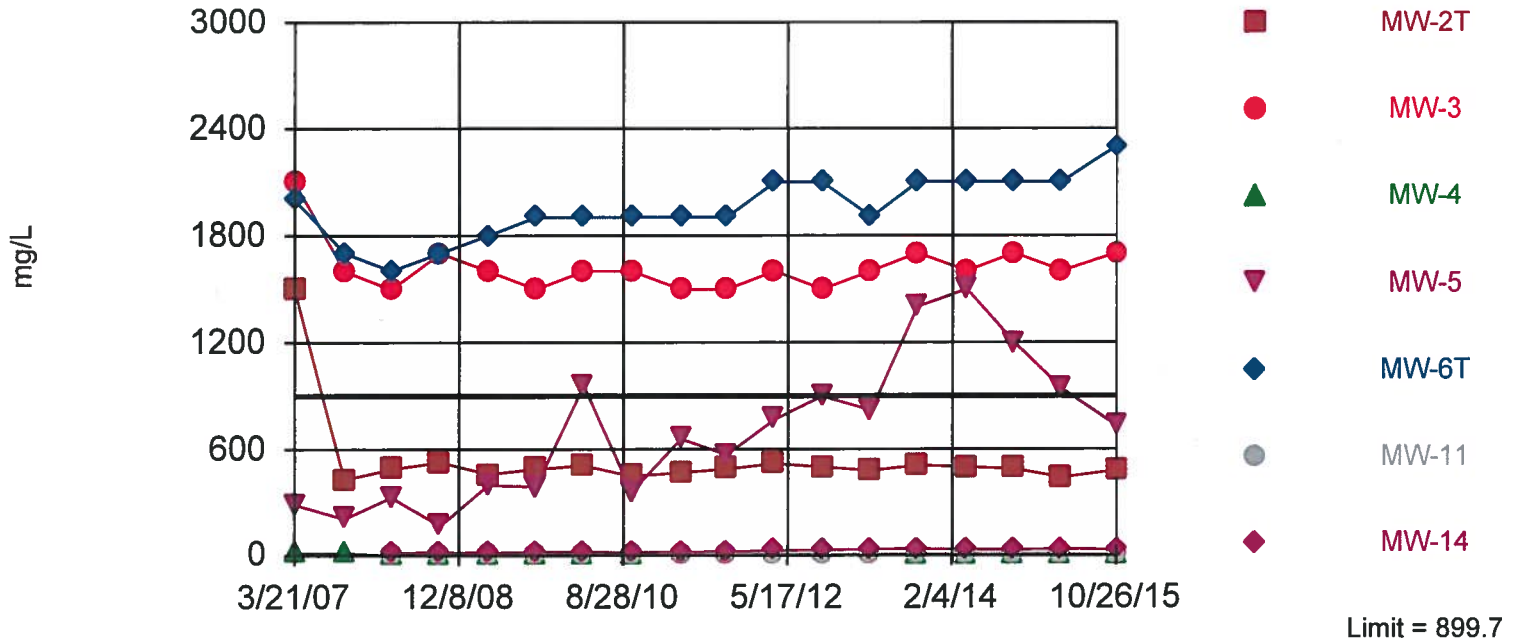
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-3, MW-6T

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=382.8, Std. Dev.=196, n=18, 5.556% NDs. Insufficient data to test for seasonality; data will not be deseasonalized. Report alpha = 0.06793. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit.

Constituent: Cloride Analysis Run 12/21/2015 2:51 PM

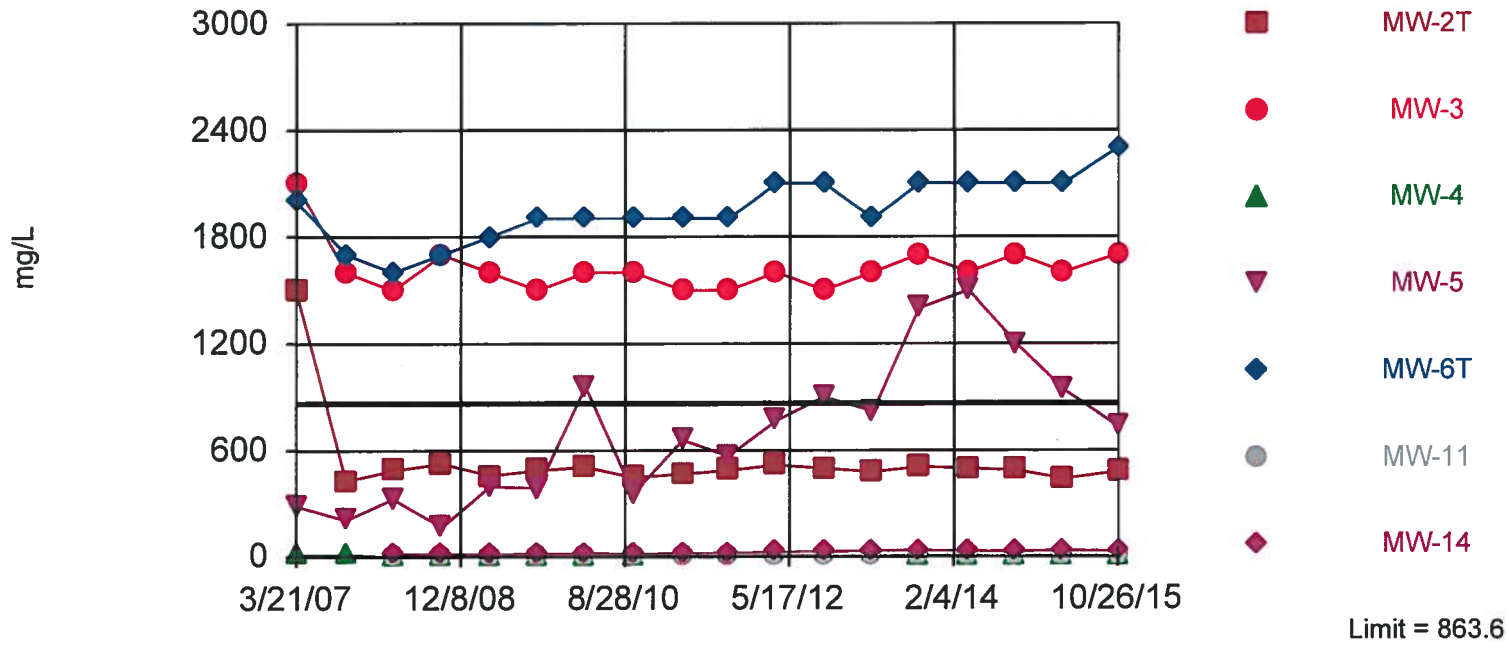
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41
Hollow symbols indicate censored values.

Exceeds Limit: MW-3, MW-6T

Tolerance Limit

Interwell Parametric



95% coverage. Most recent observation is compared with limit. Background Data Summary: Mean=382.8, Std. Dev.=196, n=18, 5.556% NDs. Report alpha = 0.05.

Constituent: Cloride Analysis Run 12/21/2015 2:52 PM

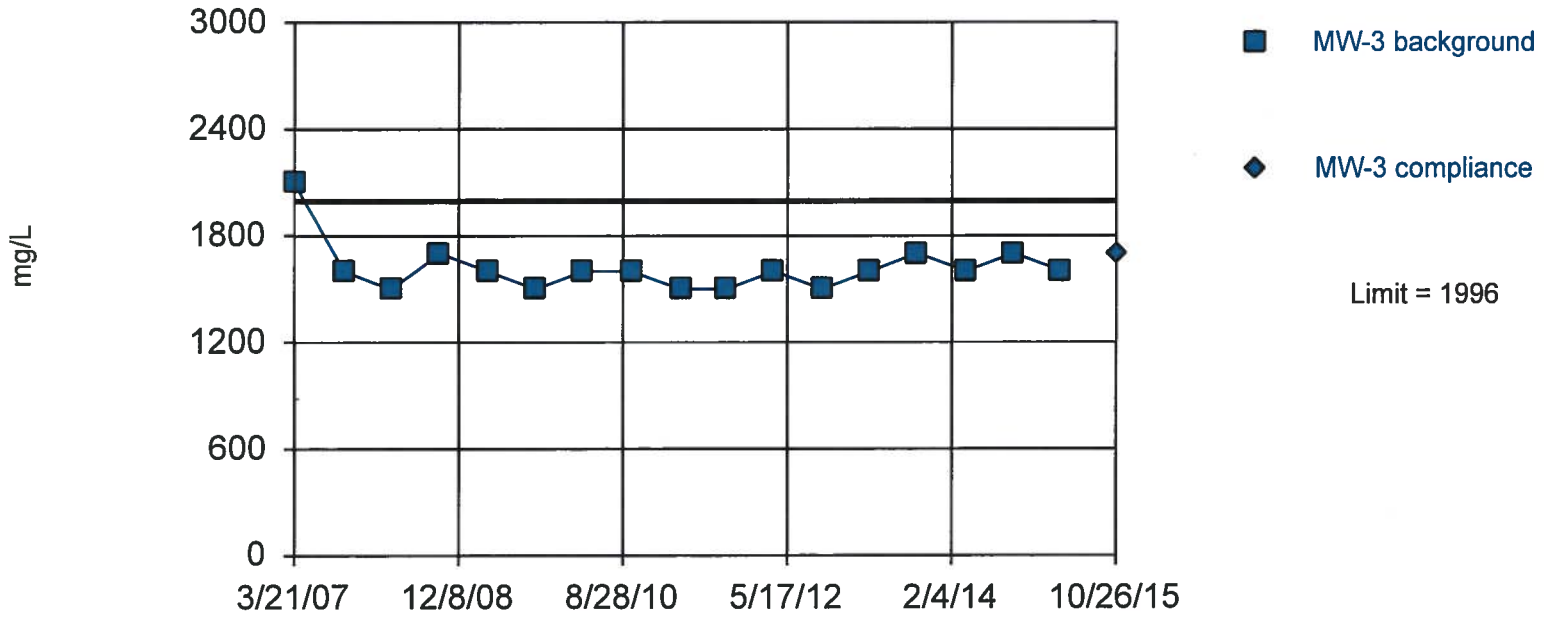
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1618, Std. Dev.=142.5, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: Cloride Analysis Run 12/21/2015 3:17 PM

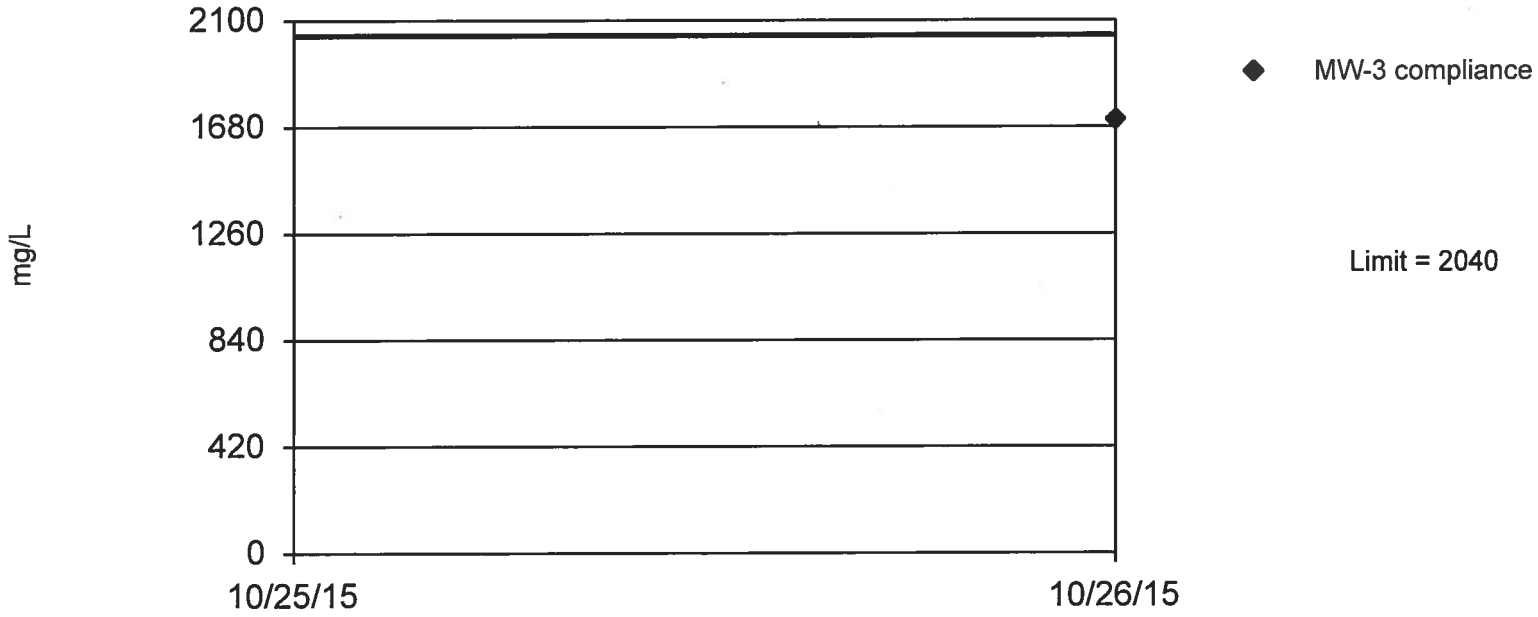
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=1618, Std. Dev.=142.5, n=17. Report alpha = 0.01.

Constituent: Cloride Analysis Run 12/21/2015 3:17 PM

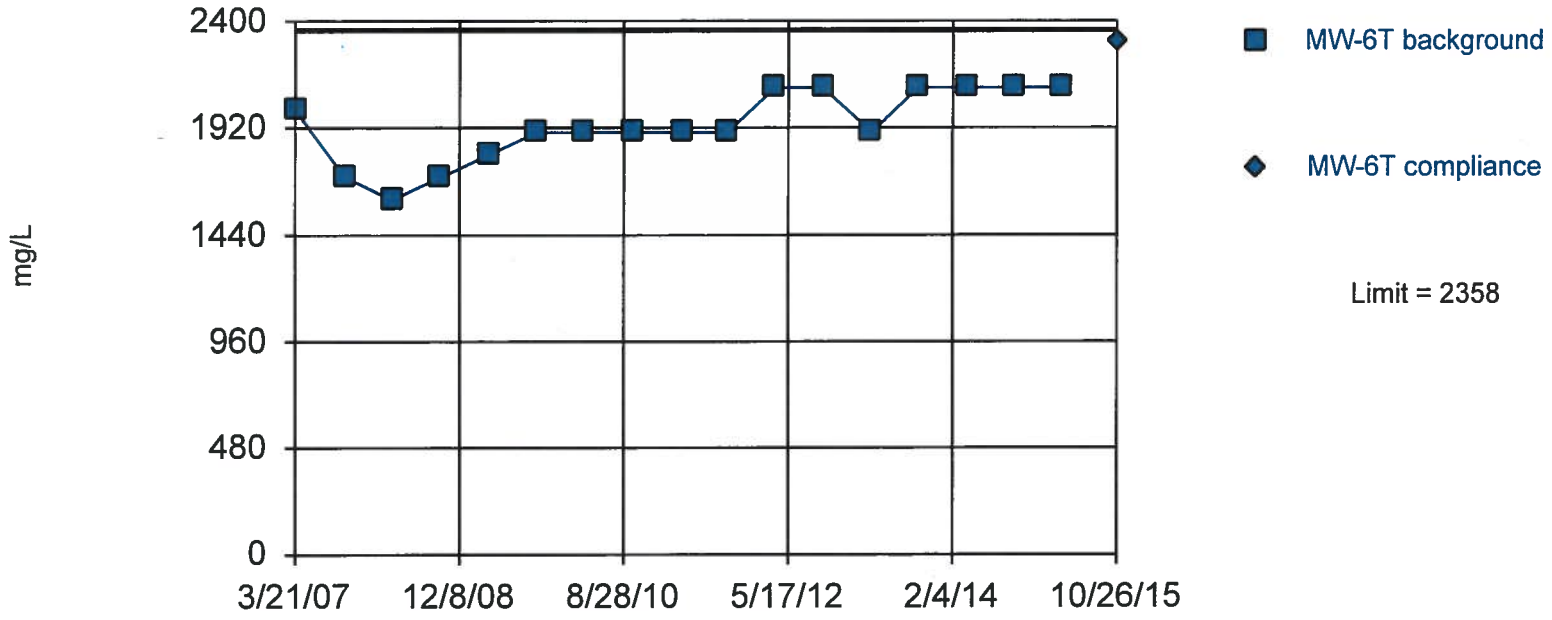
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1929, Std. Dev.=161.1, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: Cloride Analysis Run 12/21/2015 3:17 PM

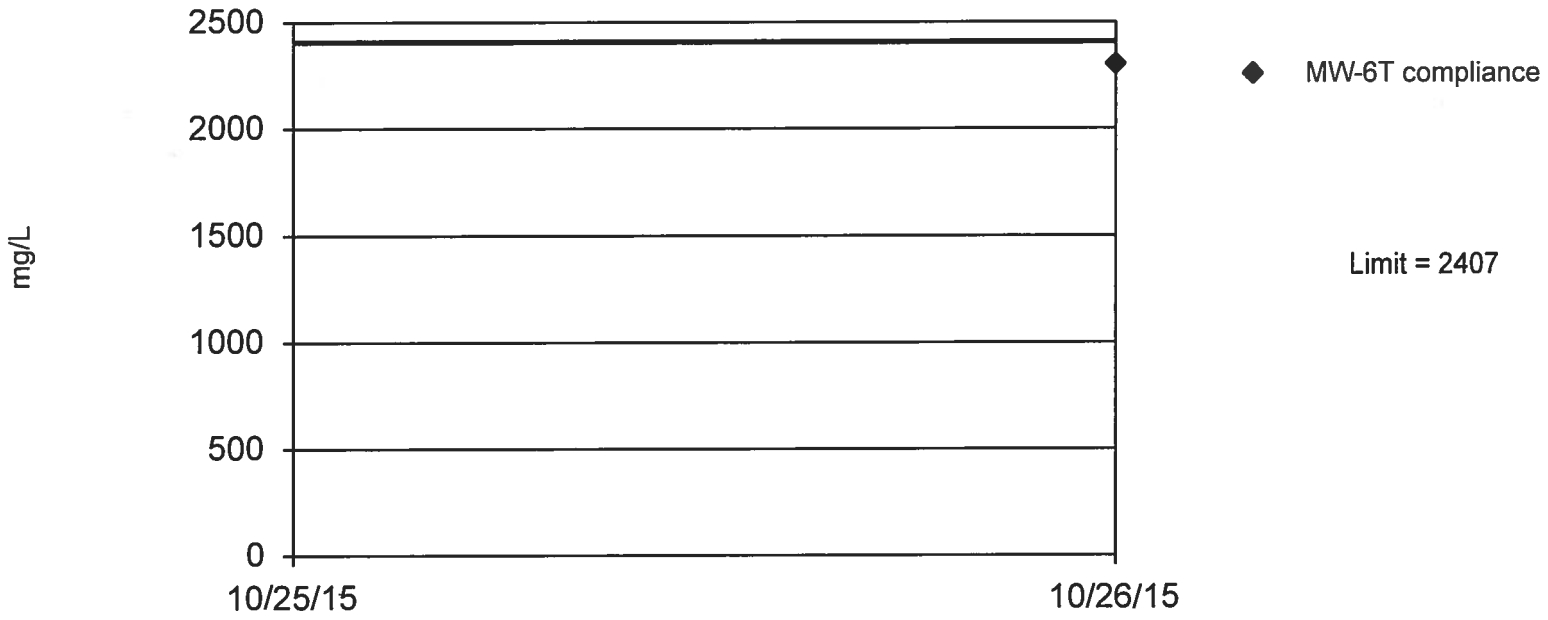
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=1929, Std. Dev.=161.1, n=17. Report alpha = 0.01.

Constituent: Cloride Analysis Run 12/21/2015 3:18 PM

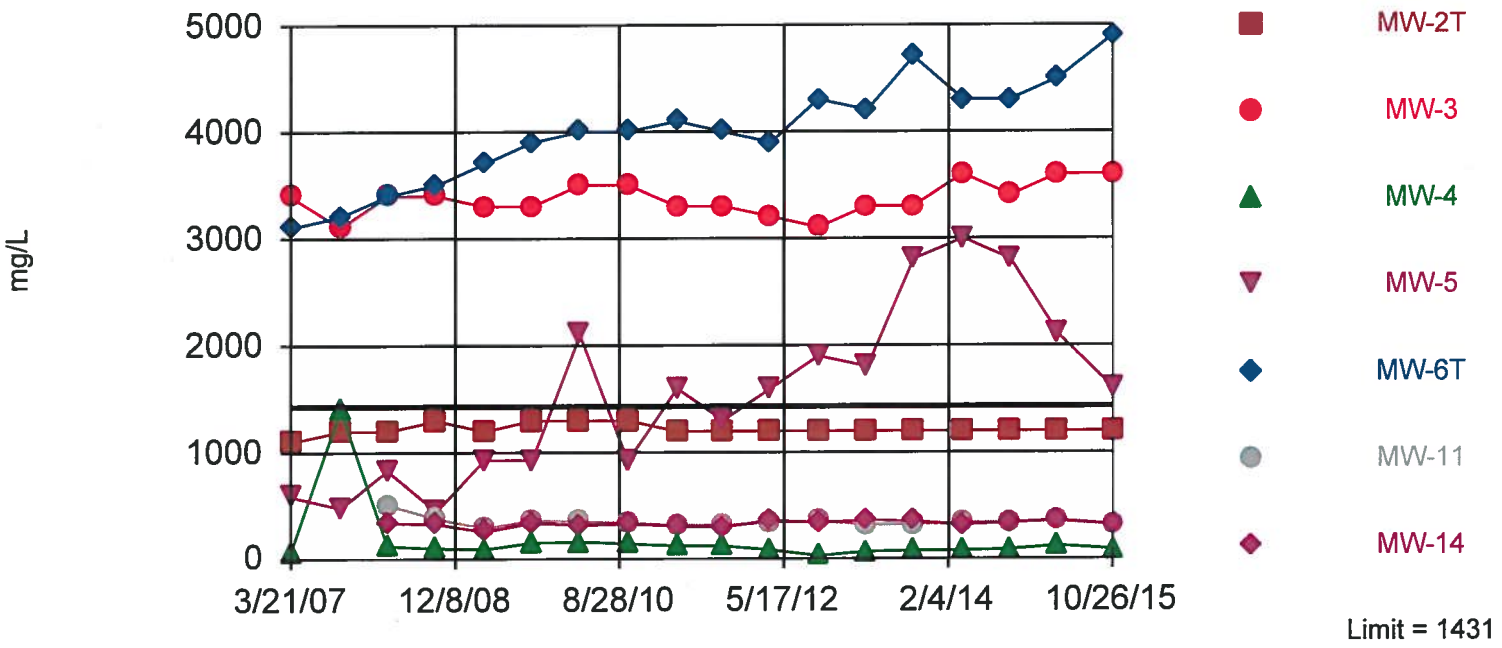
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Exceeds Limit: MW-3, MW-5, MW-6T

Tolerance Limit

Interwell Parametric



95% coverage. Most recent observation is compared with limit. Background Data Summary: Mean=953.3, Std. Dev.=194.6, n=18. Report alpha = 0.05.

Constituent: TDS Analysis Run 12/21/2015 3:01 PM

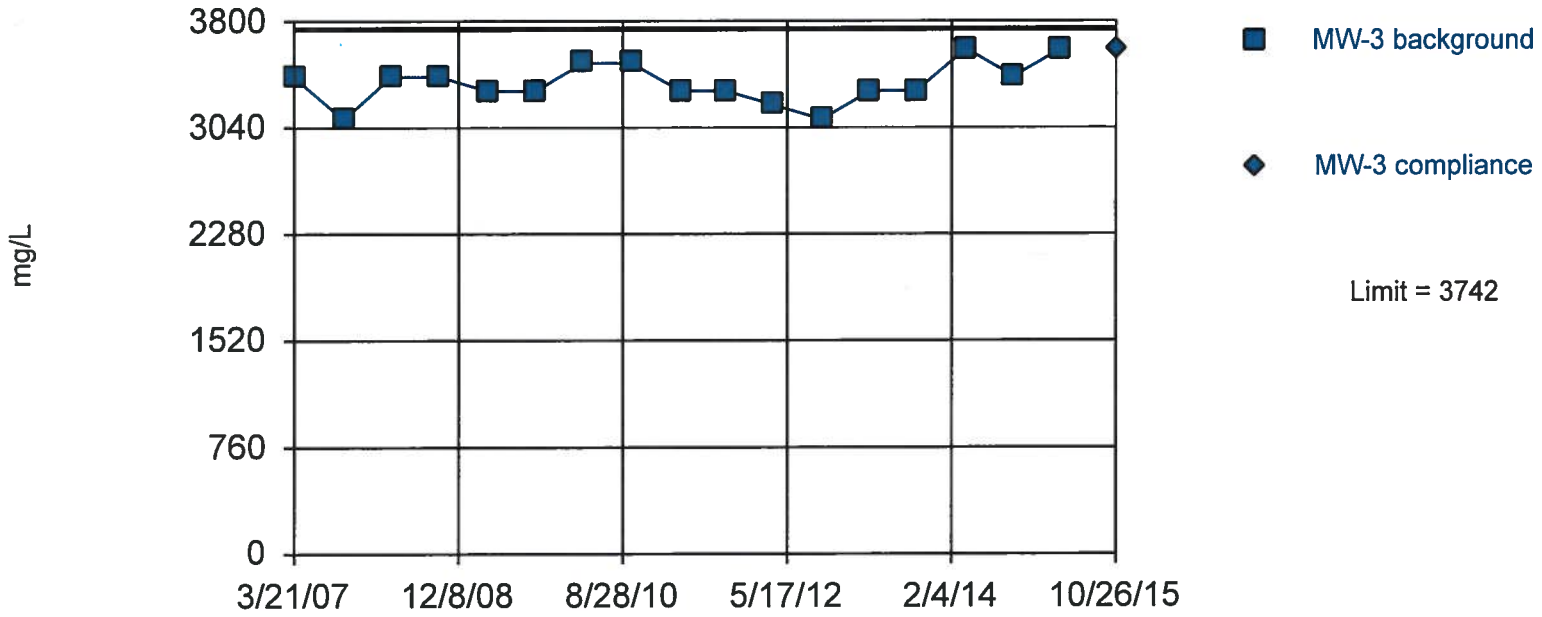
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3353, Std. Dev.=146.3, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: TDS Analysis Run 12/21/2015 3:02 PM

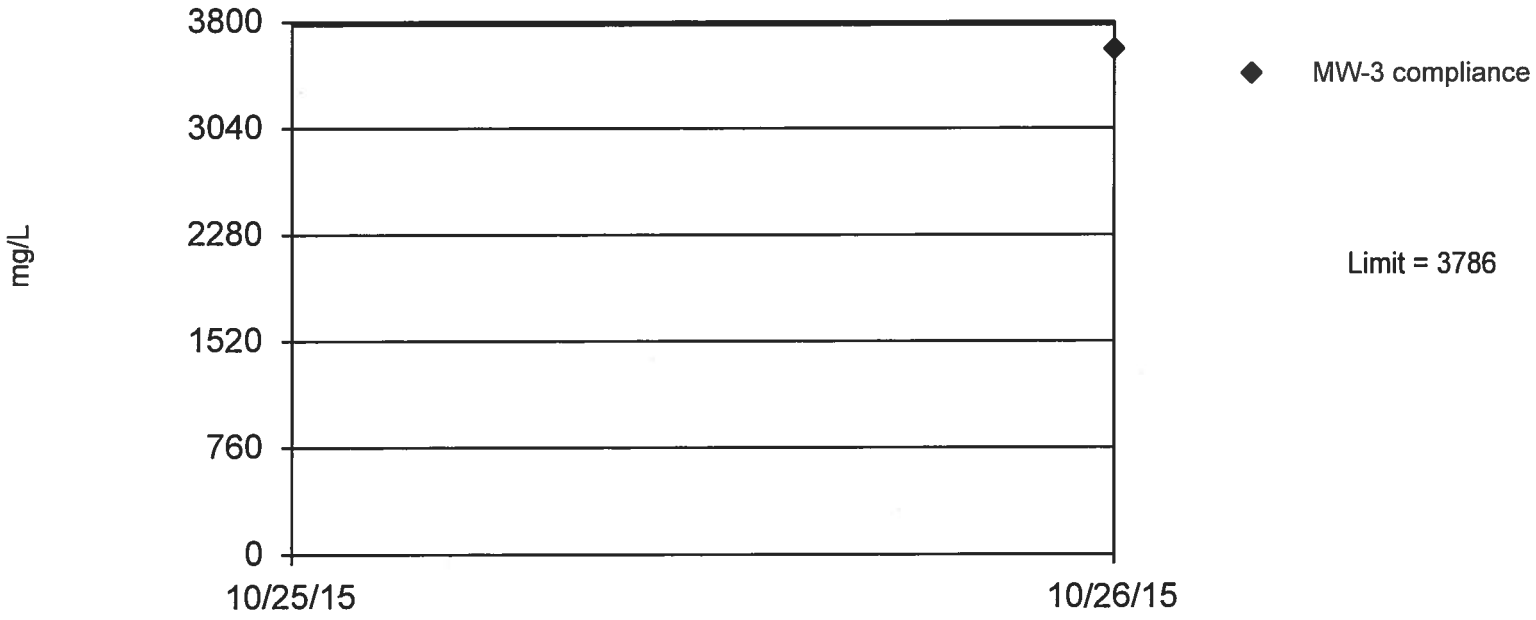
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=3353, Std. Dev.=146.3, n=17. Report alpha = 0.01.

Constituent: TDS Analysis Run 12/21/2015 3:04 PM

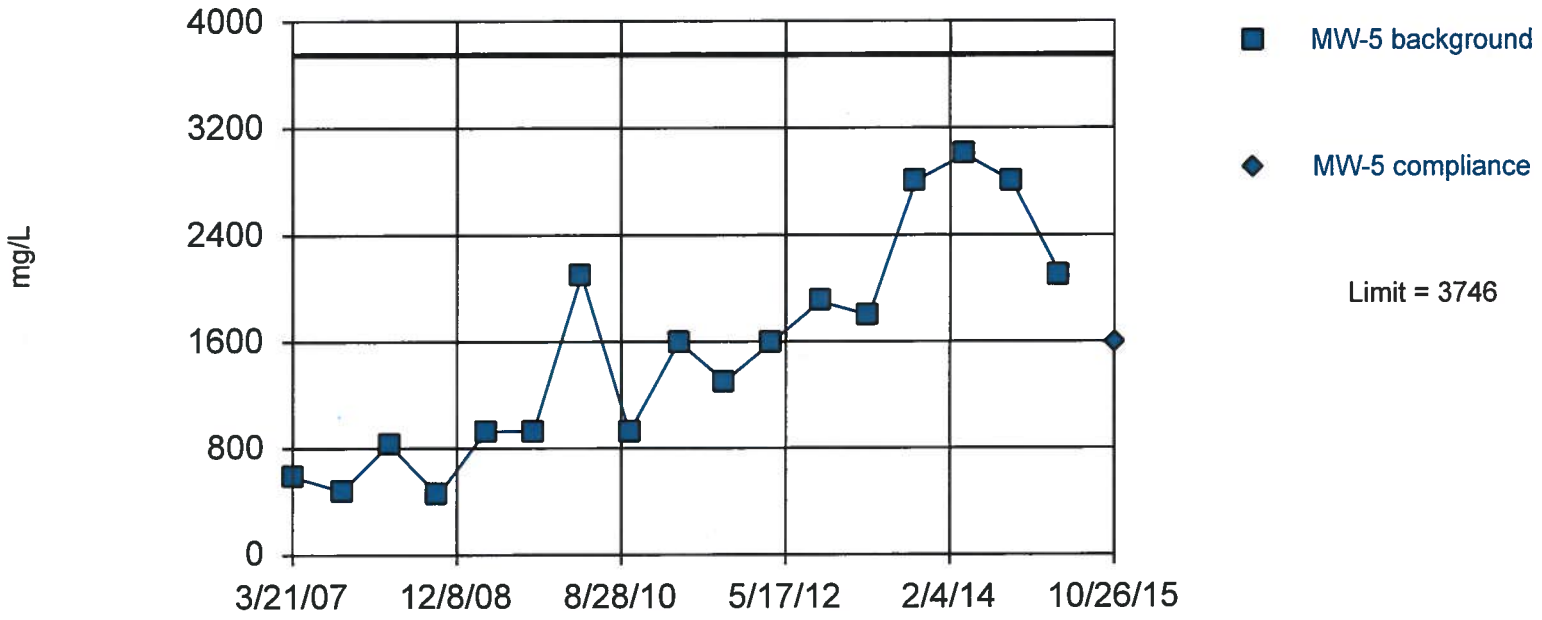
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1537, Std. Dev.=830.8, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: TDS Analysis Run 12/21/2015 3:05 PM

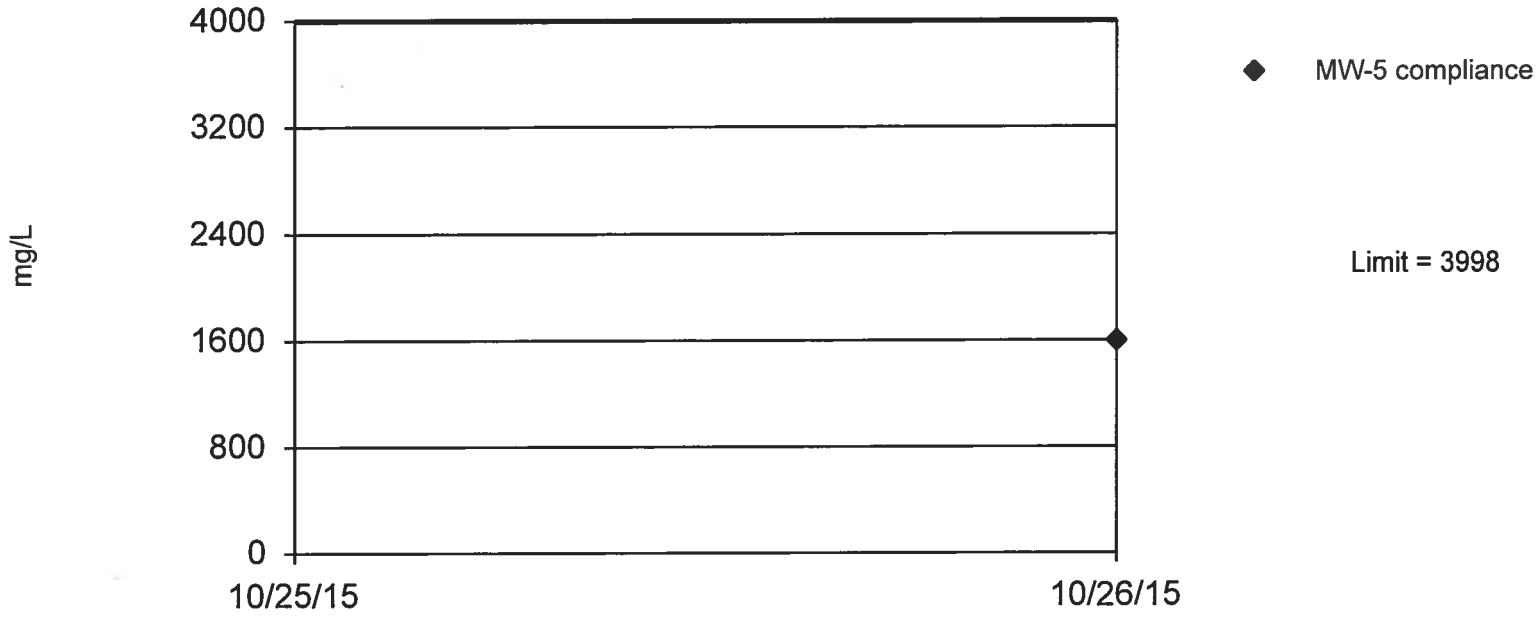
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=1537, Std. Dev.=830.8, n=17. Report alpha = 0.01.

Constituent: TDS Analysis Run 12/21/2015 3:05 PM

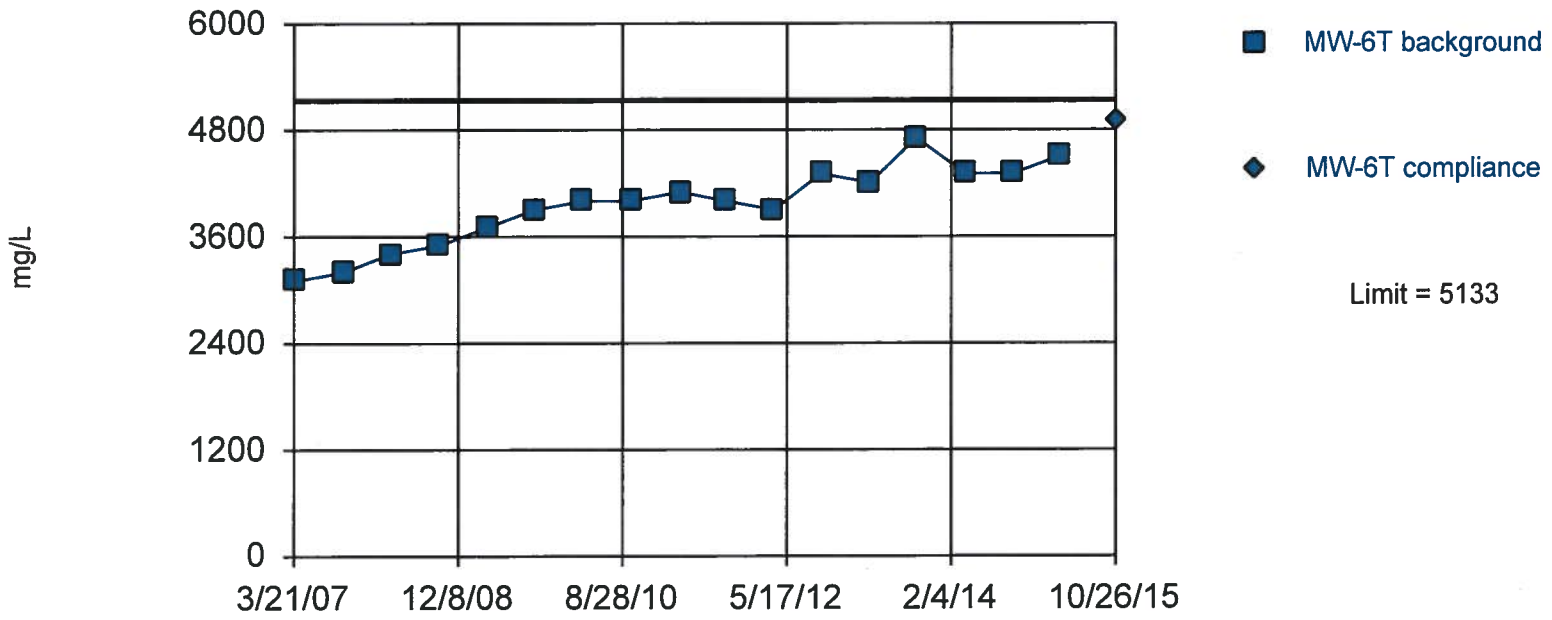
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3947, Std. Dev.=446, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Report alpha = 0.01. Most recent point compared to limit.

Constituent: TDS Analysis Run 12/21/2015 3:06 PM

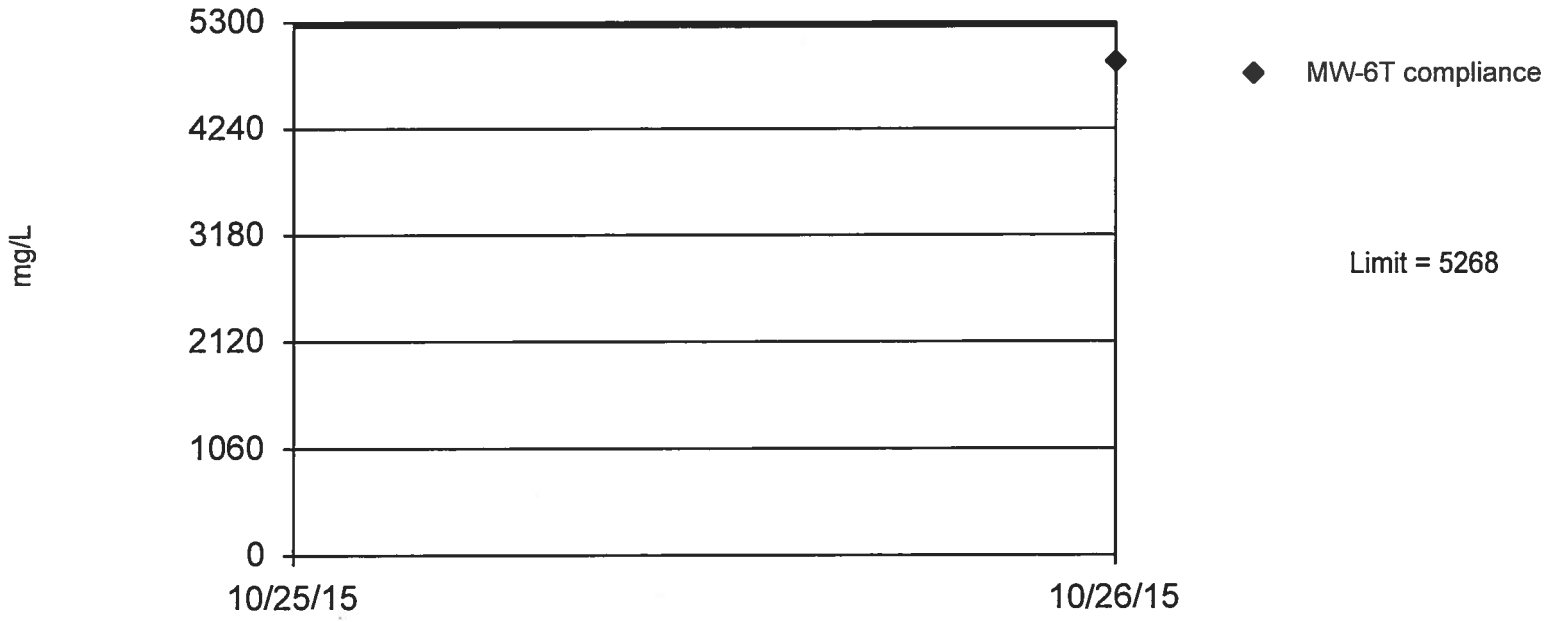
Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

WQStat Plus™ v.9.4.41

Within Limit

Tolerance Limit

Intrawell Parametric



95% coverage. Background Data Summary: Mean=3947, Std.Dev.=446, n=17. Report alpha = 0.01.

Constituent: TDS Analysis Run 12/21/2015 3:08 PM

Facility: Red Rock C&D Landfill Data File: Stats Table Sept 2015

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates NC, Inc.
5B Oak Branch Drive
Greensboro, NC 27407 USA
(336) 852-4903 - Phone
(336) 852-4904 - Fax

Golder Associates