2017 ANNUAL MONITORING REPORT

Groundwater Quality Monitoring Program
Oil and Gas Well Sites
Longmont, Colorado

July 5, 2017
Terracon Project No. 22177002

Prepared for:
City of Longmont
Longmont, Colorado

Prepared by:
Terracon Consultants, Inc.
Longmont, Colorado

July 5, 2017

City of Longmont
7 South Sunset Street
Longmont, Colorado 80501

Attn: Mr. Dan Wolford
P: (303) 774-4691
Dan.Wolford@ci.longmont.co.us

Re: 2017 Annual Monitoring Report
Groundwater Quality Monitoring Program
Oil and Gas Well Sites
Longmont, Colorado
Terracon Project No. 22177002

Dear Mr. Wolford:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report of the 2017 Annual Groundwater Quality Monitoring Program activities completed at 9 active oil and gas (O&G) well sites and 1 plugged and abandoned O&G well site located in the City of Longmont, Colorado just west of County Road 1 and as far east as County Road 7. The report presents data from recent field activities that included the collection of groundwater samples for laboratory analysis and methane air monitoring. The activities were completed to address the findings presented in Terracon's *2012 Annual Oil & Gas Wellhead Reconnaissance Report* dated August 21, 2012, the *First Quarter 2013 Monitoring Report* dated May 31, 2013, the *Third Quarter 2013 Monitoring Report* dated December 31, 2013, the *First Semi-Annual 2014 Monitoring Report,* dated October 16, 2014, the *First Semi-Annual & Biennial 2015 Monitoring Report,* dated July 9, 2015, and the *Annual 2016 Monitoring Report, dated August 31, 2016.* Terracon conducted the monitoring in general accordance with our proposal (P22177002) dated March 9, 2017, and the Sampling and Analysis Plan dated February 1,2013.

Terracon appreciates this opportunity to provide environmental services to the City of Longmont. Should you have any questions or require additional information, please do not hesitate to contact us at 303-454-5249.

Sincerely,
Terracon Consultants, Inc.

Michael J. Skridulis
Project Manager

Derek A. Brown, P.E.
Environmental Department Manager

Terracon

TABLE OF CONTENTS

2017 ANNUAL MONITORING REPORT
GROUNDWATER QUALITY MONITORING PROGRAM
OIL AND GAS WELL SITES
LONGMONT, COLORADO

Terracon Project No. 22177002
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1.0 SITE DESCRIPTION

This project consists of sampling monitoring wells associated with nine active oil and gas (O&G) well sites, one plugged and abandoned O&G well site, and five associated tank batteries located within the City of Longmont, Colorado (the City) just west of County Road 1 and as far east as County Road 7 (Exhibit 1). The 2017 monitoring event analyzed potential impacts to groundwater and air quality, in accordance with Terracon Proposal No. P22177002, at the following sites:

- Sherwood #1;
- Sherwood #2;
- City of Longmont #1;
- Serafini Gas Unit;
- Powell #1;
- Evans #6 Wellhead;
- Evans #6 Tank Battery;
- Domenico #1;
- Stamp 31-2C; and,
- Rider #1.

The 2017 monitoring event well site locations are shown on Exhibit 1.

2.1 SCOPE OF SERVICES

The 2017 annual groundwater quality monitoring services described below, were completed as a modification to the sampling strategy outlined in the Sampling and Analysis Plan (SAP) prepared and issued by Terracon on February 1, 2013. Based on the initial groundwater sampling results reported in 2013, the sampling frequency and laboratory analyte list have been modified.

The monitoring wells at the following well sites were sampled during this annual event:

- Sherwood #1: SH1-MW02;
- Sherwood #2: SH2-MW01, SH2-MW02, and SH2-MW03;
- City of Longmont #1: CL1-MW02 and CL1-MW03;
- Serafini Gas Unit: SGU-MW01, SGU-MW02, and SGU-MW03;

- Powell #1: PL1-MW01 and PL1-MW02;
- Evans #6 Wellhead: E6W-MW01, E6W-MW02, and E6W-MW03;
- Evans #6 Tank Battery: E6T-MW01, E6T-MW-02, and E6T-MW03;
- Domenico #1: DM1-MW01, DM1-MW02, and DM1-MW03;
- Stamp 31-2C: S31-MW01, S31-MW03, S31-MW04, S31-MW05, and S31-MW06; and,
- Rider #1: RD1-MW01, RD1-MW02, RD1-MW04, RD1-MW05, and RD1-MW06.

Terracon sampled a total of 30 of the 31 groundwater monitoring wells for the analytical suite listed in the table below. Section 3.1 discusses monitoring wells that could not be sampled.

Groundwater Sample Constituents

Parameters	Analytical Method
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	EPA Method 8260
Dissolved Gasses: Methane, Ethane and Ethylene	RSK 175
Major Cations – Dissolved (Calcium, Magnesium, Sodium, Iron, and Potassium)	EPA Method 6010B
Nitrate and Nitrite	EPA Method 300.0
Bromide	EPA Method 300.0
Chloride	EPA Method 300.0
Sulfate	EPA Method 300.0
Alkalinity	SM 2320B
Strontium	EPA Method 6020

Additionally, temperature, pH, specific conductivity, dissolved oxygen and oxygen reducing potential measurements were collected in the field during groundwater sampling.

The well/battery sites and monitoring well heads were also monitored for methane in the field using a hand-held 6-gas meter as outlined in Terracon Proposal No. 22177002.

2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work (SOW) agreed with you, our client, as reflected in our proposal.

2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from the services provided are based upon information derived from the on-site activities and other services performed under this SOW; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the sites contain no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during monitoring well construction and groundwater sampling. Subsurface conditions may vary from those encountered at specific wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at this time and within the scope of the services provided.

2.3 Reliance

This report has been prepared for the exclusive use of the City, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of the City and Terracon. Any unauthorized distribution or reuse is at the City's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, this report, and service agreement for the project.

3.0 PREVIOUS INVESTIGATIONS

3.1 Terracon Limited Site Investigation

Terracon conducted a Limited Site Investigation (LSI) for the City dated January 11, 2011. Thirteen soil borings were advanced throughout the project area to help assess and evaluate potential environmental soil and groundwater impact. Fine grain sand, silty sand, and sandy gravel over lying claystone and sandstone bedrock were observed in the soil borings during the LSI. The LSI borings were advanced at depths ranging from approximately 7.5 feet to 29 feet bgs. Gray staining and petroleum odors were observed in soil samples collected from borings B9, B10, B11, and B13. Indications of potential environmental impact (chemical odors, staining, or elevated photoionization detector [PID] measurements) were not observed in the remaining LSI borings. Depth to groundwater was measured in LSI borings ranging from approximately 4 feet bgs (boring B7) to approximately 23.25 feet bgs (boring B1). Thirteen soil samples and 10 groundwater samples were collected and submitted for laboratory analyses. The analytical results are summarized below:

- Total petroleum hydrocarbon (TPH) was reported in soil sample B9-6 (collected near the Serafini tank battery) and soil sample B13-8 (collected near the Stamp

#2 well head) to be above the guidance value of 500 mg/kg established by Colorado Oil and Gas Conservation Commission (COGCC). TPH concentrations in remaining LSI soil sample were either below laboratory reporting limits or below guidance concentrations.

- PAHs in soil samples B9-6 (collected near the Serafini tank battery) and B13-8 (collected near the Stamp #2 well head) were reported as either below laboratory reporting limits or below their respective guidance concentrations.
- Benzene was reported in soil sample B9-6 (collected near the Serafini tank battery) above the guidance concentration. BTEX in remaining soil samples were either below laboratory reporting limits or below guidance concentrations Benzene was reported in groundwater sample B9 (collected near the Serafini tank battery) above regulatory guidance concentrations. BTEX in remaining groundwater samples were either below laboratory reporting limits or below regulatory concentrations.

Terracon recommended that the City should contact Top Operating to pursue remedial activities of the petroleum-impacted soil and groundwater above regulatory standards observed near the well heads of the two locations (Serafini and Stamp #2 wells).

3.2 Olsson Limited Site Investigation Stamp #2 Battery

Olsson conducted a LSI for Top Operating, which included the installation of six groundwater monitoring wells on May 8, 2012, to assess the nature and extent of soil and groundwater impacts. Groundwater samples were collected and analyzed for BTEX quarterly in May, August, and October 2012.

The analytical results for groundwater samples from monitoring wells MW-1, MW-3, MW-4, and MW-6 show that benzene, toluene, ethylbenzene, and total xylenes were not detected at or above the laboratory reporting limits.

Benzene was reported at 0.130 mg/L in the MW-5 groundwater sample during the May 2012 groundwater monitoring event but was not detected in subsequent sampling events. Benzene is the only compound of concern that was detected in the MW-2 groundwater sample above the COGCC Table 910-1 concentration level of 0.005 mg/L for benzene. Benzene was reported in the MW-2 groundwater sample at a concentration of 0.470 mg/L and in the MW-3 groundwater sample at a concentration of 0.013 mg/L during the August 2012 groundwater monitoring event. Groundwater analytical results for the sample collected from monitoring well MW-2 during the October 30, 2012 monitoring event reported benzene at a concentration of 1.6 mg/L, which is above the COGCC concentration level of 0.005 mg/L. Monitoring well MW-2 is located down gradient of the tank berm, and up gradient of the former reserve pit and of the Stamp #2 wellhead. The benzene concentration observed in this groundwater sample may be the result of impacted soils within the former reserve pit that is believed to have been located to the north of

the Stamp #2 wellhead. Monitoring well MW-3 is located in close proximity to the O&G wellhead and impacts in this monitoring well may have been attributed to releases from the wellhead. Monitoring well MW-5 is located downgradient of the O&G wellhead and impacts in this monitoring well may have been attributed to releases from the wellhead

Benzene was reported at 0.130 mg/L in the MW-5 groundwater sample during the May 2012 groundwater monitoring event, but was not detected in any of the other five monitoring well samples.

A comparison of groundwater level measurements in the monitoring wells across the site from August and October 2012 groundwater data show a decrease of two feet to three feet as compared to groundwater levels measured during the August 2012 monitoring event. Monitoring well MW-1 was an exception where groundwater levels only declined by 0.17 feet. The decrease in groundwater levels, due to drought conditions, may be the reason that benzene was not reported in the other monitoring wells onsite. The onsite groundwater represents a shallow perched groundwater table on top of shale and claystone bedrock. The drop in groundwater levels may have declined below this impacted interval within the former reserve pit and the hydrocarbon smear zone.

3.3 Olsson Limited Site Investigation and Remediation – Serafini Gas Unit Tank Battery

On July 6, 2012, Olsson performed a LSI of the Serafini Gas Unit Tank Battery to further assess the soil impacts identified by Terracon during a previous LSI. The Olsson report stated, “The Serafini Gas Unit 1-18 well was drilled and completed in 1982. There was an unlined earthen pit located at the site that was used for produced water storage that Top Operating Permitted with the COGCC in early 1990. The pit is identified in the COGCC records as facility number 103527. The pit is not shown to have been closed; however, the tank battery has two produced water sumps located on the west and southwest end of the tank berm. The pit was shown to be located to the southwest of the tank battery, and southeast of the separators. The former pit may be the source of the impacts.”

Using a John Deere Turbo 4x4 Powershift 310 SG backhoe, a total of five test pits were excavated to the north and east (downgradient) of the centralized tank battery. Black stained gravel and soils were encountered in test pit TP-1, located near Terracon soil boring B9, at five to six feet bgs and the soil had a PID reading of 1,101 ppm. No evidence of staining or odor was found in the other four test pits and the PID readings ranged from 3 to 5 ppm.

The laboratory analytical results showed that concentrations of benzene, toluene, ethylbenzene, and total xylenes, GRO, and DRO were not detected at or above the laboratory reporting limit in soil sample IDs TP-2 @ 5 feet, TP-3 @ 5 feet, TP-4 @ 5 feet, or TP-5 @ 5 feet. Analytical results for the soil sample collected from TP-1 include benzene at 0.020 mg/kg, ethylbenzene at

0.034 mg/kg, and total xylenes at 7.0 mg/kg, which are below the COGCC Table 910-1 cleanup levels. Toluene was not detected. The TPH-gasoline range organics (GRO) result was 780 mg/kg which is above the COGCC Table 910-1 cleanup level of 500 mg/kg. The TPH-diesel range organics (DRO) concentration was reported at 100 mg/kg, which is below the COGCC Table 910-1 cleanup level.

Top Operating and Olsson installed an infiltration gallery within test pit TP-1 consisting of a 4-inch diameter polyvinyl chloride (PVC) riser pipe, a 90° PVC elbow, and a length of 4-inch diameter 0.020 factory slotted pipe into test pit TP-1 approximately a foot from the base of the trench. The trench was filled with clean ¾ inch diameter gravel up to approximately one foot bgs, and the surface was completed with clean excavated overburden soils that had been segregated and set off to one side. The impacted soils were hauled offsite. The PVC riser pipe was completed at the surface with a PVC slip cap, and was covered with a 10-inch diameter flush mount well cover that was grouted in place within the center of the access driveway. The purpose of the infiltration gallery pipe was to pump out groundwater using a 1-inch diameter PVC stinger pipe and a vacuum truck to conduct soil washing and remove the petroleum hydrocarbons from the subsurface. This design allowed for remediation of the site without disrupting the production operations for the central tank battery. On August 8, 2012, grab groundwater samples were collected from the infiltration gallery and the laboratory analytical results did not detect concentrations of BTEX. Olsson recommended that a vacuum truck with a dedicated PVC stinger pipe be used to remove groundwater from the trench on a quarterly basis for up to one year.

4.1 FIELD INVESTIGATION

Terracon conducted the groundwater sampling and methane monitoring activities under a site-specific Health and Safety Plan (HASP) developed for this project. Work was performed using Occupational Safety and Health Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots.

Terracon followed the procedures outlined in the February 1, 2013 site-specific SAP, which included the following:

- Location of proposed boreholes/monitoring wells at each well site as agreed to by the City's representative, (Mr. Dan Wolford [Natural Resources Division, Manager of Open Space]);
- Types of samples to be collected and collection methods;
- Sample tests/analyses and methods; and,
- Quality control and quality assurance measures.

This monitoring event was conducted in general accordance to the SAP with modifications (the removal of sampling well sites from the sampling event, as described above).

4.1 Groundwater Sampling

Terracon used hand bailing sampling techniques with a disposable bailer to purge and obtain a representative groundwater sample from the monitoring wells. The monitoring wells were sampled in accordance with "Terracon Field Methods for Petroleum Storage Tank Assessment, Remediation and Emergency Response", November 2013. After groundwater parameters of pH, temperature, dissolved oxygen, ORP, and specific conductivity had stabilized, a groundwater sample was collected from each of the monitoring wells. The groundwater samples were placed in a laboratory provided, pre-cleaned containers and stored in a cooler with ice at 4° (± 2°) Celsius during delivery to the laboratory. The samples were submitted under chain-of-custody protocol and analyzed for the parameters summarized in Section 2.0 on a standard turn-around time and according to the appropriate United States Environmental Protection Agency (USEPA) analytical methods.

The groundwater sample naming convention used is as follows:

- [Site Abbreviation]-[Well Designation]-[6 Digit Date: YYMMDD].
- Example: SH2-MW01-170523 is the groundwater sample collected from Sherwood #2 well site, monitoring well MW01 on May 17, 2017.
- Note: In laboratory reports, monitoring wells are identified without the 6-digit date.

The groundwater samples were submitted to ESC Lab Sciences (ESC) in Mount Juliet, Tennessee. ESC performed Quality Analysis/Quality Control (QA/QC) during the analysis process of the groundwater samples. The QA/QC process involved completing a method blank, laboratory control sample, matrix spike, matrix spike duplicate, and a sample duplicate to test the accuracy and calibration of the laboratory equipment and processes.

4.2 Monitoring Wells Not Sampled

On May 27, 2017, Terracon observed that monitoring well RD1-MW3R at the Rider #1 well site was destroyed. The monitoring well vault was broken, the PVC casing was open to the environment with no J-plug present, and the monitoring well was filled with sediment, bringing the total depth of the sediment to 5.40 feet bgs. Due to the observed conditions, Terracon was unable to collect a groundwater samples from the aforementioned monitoring well.

4.3 Methane Air Monitoring

Terracon conducted ambient air monitoring on-site at each of the O&G well heads and associated tank batteries. A hand-held 6-gas monitor, which displays reading from 0-99% lower explosive limit (LEL) of methane, was used to scan around the well heads and tank batteries and the opening to each monitoring well. No readings above 0% LEL for methane were

detected at any of the sites included in the 2017 annual groundwater quality monitoring program.

5.0 RESULTS OF THE FIELD INVESTIGATION

5.1 Hydrogeology

Groundwater was encountered from 2.31 feet below top of casing (BTOC) as observed in monitoring well DM1-MW02 (Domenico #1) to 11.40 feet BTOC as observed in PL1-MW02 (Powell #1). Groundwater elevations were observed ranging from 4,851.77 feet above mean sea level (amsl) in monitoring well DM1-MW03 (Domenico #1) to 4,953.72 feet amsl in monitoring well S31-MW01 (Stamp 31-2C). Depth to groundwater and groundwater elevation data are summarized in Table 1.

Depth to groundwater and groundwater elevation data were used to generate potentiometric surface maps and estimated groundwater flow direction. Figures 2 and 3 illustrate potentiometric surfaces based on the groundwater elevations as measured in June (Note: Figure 2 includes all the well sites except Stamp 31-2C and Rider #1, which is on Figures 3 and 4, respectively). Monitoring well elevation data was not available for the Rider #1 Well site; therefore a potentiometric surface map was not generated for this site. However, a well location map was generated.

As depicted on the potentiometric surface maps groundwater beneath most of the well sites, in general, flows towards the St. Vrain Creek. The well site groundwater flow directions are as follows:

- Sherwood #1: northeast towards the St. Vrain Creek;
- Sherwood #2: northeast towards the St. Vrain Creek;
- City of Longmont #1: northeast towards the St. Vrain Creek;
- Serafini Gas Unit: northeast towards the St. Vrain Creek;
- Powell #1: northeast towards the St. Vrain Creek;
- Evans #6: east-southeast towards the St. Vrain Creek;
- Evans #6 Tank Battery: east-southeast towards the St. Vrain and Boulder Creeks;
- Domenico #1: north-northwest towards the St. Vrain Creek;
- Stamp 31-2C: southeast towards Union Reservoir; and
- Rider #1: north-northeast towards Spring Gulch.

6.0 ANALYTICAL RESULTS

The laboratory analytical reports and chain-of-custody records are included in Appendix B. The groundwater analytical results are summarized in Table 2. The following sections summarize the results of the analytical testing.

Laboratory analytical results for the groundwater samples were compared to the groundwater standard applicable to O&G well sites, COGCC Table 910-1 standards (May 30, 2011). The Colorado Department of Public Health and Environment's (CDPHE) Basic Standards for Groundwater (January 31, 2013) are included for reference only as the groundwater samples were not collected from a drinking water source. A summary of constituent concentrations exceeding these standards in the groundwater samples is included in Table 2.

Groundwater samples were collected from the following sites: Sherwood #1 Wellhead (1 monitoring well), Sherwood #2 Wellhead (3 monitoring wells), City of Longmont #1 Wellhead (2 monitoring wells), Serafini Gas Unit (3 monitoring wells), Powell #1 Wellhead (2 monitoring wells), Evans #6 Wellhead (3 monitoring wells), Evans #6 Tank Battery (3 monitoring wells), Domenico #1 Well site (3 monitoring wells), Stamp 31-2C Well site (5 monitoring wells), and Rider #1 Well site (5 monitoring wells); for a total of 30 samples. The groundwater analytical results for detected concentrations are discussed in the following sections.

6.1 Organic Compounds

BTEX compounds and dissolved methane and ethane were detected above their respective laboratory reporting limits at the following sites. Dissolved ethene was not detected above the laboratory reporting limit in any of the samples collected.

6.1.1 Serafini Gas Unit

BTEX compounds were detected in one groundwater sample at concentrations above the laboratory reporting limits at the Serafini Gas Unit well site.

- Sample SGU-MW02 was reported with a benzene concentration of 0.0353 milligrams per liter (mg/L), above the COGCC and CDPHE standard of 0.005 mg/L.
- Methane was reported in sample SGU-MW02 at a concentration of 0.0884 mg/L.

6.1.2 Powell #1

- Methane was reported in sample PL1-MW02 at a concentration of 0.0231 mg/L.

6.1.3 Domenico #1

- Methane was reported in sample DM1-MW01 at a concentration of 0.213 mg/L and in sample DM1-MW02 at a concentration of 0.0152 mg/L.

6.1.4 Stamp 31-2C

BTEX compounds were detected in one groundwater sample at concentrations above the laboratory reporting limits at the Stamp 31-2C well site.

- Sample S31-MW01 was reported with an ethylbenzene concentration of 0.00648 mg/L, below the COGCC and CDPHE standard of 0.7 mg/L.
- Methane was reported in samples S31-MW01 and S31-MW03 at concentrations of 0.318 mg/L and 0.319 mg/L, respectively.
- Ethane was reported in samples S31-MW01 and S31-MW03 at concentrations of 0.0145 mg/L and 0.19 mg/L, respectively.

6.1.5 Rider #1

BTEX compounds were detected in two groundwater samples at concentrations above the laboratory reporting limits at the Rider #1 Well site.

- Samples RD1-MW02 and RD1-MW05 had a reported concentration of ethylbenzene at 0.00525 mg/L and 0.00112 mg/L respectively, below the COGCC and CDPHE standard of 0.7 mg/L.
- Sample RD1-MW02 and RD1-MW05 had a reported concentration of total xylenes at 0.048 mg/L and 0.00812 mg/L, below the COGCC and CDPHE standard of 1.4 to 10 mg/L.
- Methane was reported in samples RD1-MW02 and R-MW05 at concentrations of 0.176 mg/L and 0.0449 mg/L, respectively.

6.2 Inorganics in Groundwater

Inorganic cations and anions can be secondary indicators of well site releases associated with produced water. Neither CDPHE nor the COGCC have developed groundwater standards for the following indicator parameters: dissolved calcium, dissolved magnesium, dissolved potassium, dissolved sodium, strontium, alkalinity species, or bromide.

The COGCC has defined the groundwater standard exceedance concentrations for chloride and sulfate to be a regional background concentration with a multiplier of 1.25. Terracon utilized

2017 analytical data for chloride and sulfate from the sites sampled during the 2017 sampling event to calculate respective regional background concentrations.

Terracon used the USEPA's statistical software (ProUCL), Version 5.1, to determine if the dataset used to calculate the mean was statistically normal. The ProUCL software can be downloaded at https://www.epa.gov/land-research/proucl-software. After eliminating monitoring well analytical data that was not representative of normal conditions, the data was inputted into ProUCL. Analysis was conducted to evaluate if there are additional outlying data points (outlier test – Appendix C) and if the data set adhered to a normal distribution (normal Q-Q Plot – Appendix C). Several sulfate analytical results were removed from the data set based on the results of the initial outlier test. Only the final outlier test showing no outliers is included in Appendix C. The outlier test does state that there is a potential outlier. However, based on a 1% and 5% significance level, there were no potential outliers; therefore no additional analytical results were removed from the data set. A normal Q-Q plot was then generated to evaluate if the data set for chloride and sulfate adhered to a normal distribution. The normal Q-Q plot, included in Appendix C, illustrates that both data sets are normal. The mean and standard deviation were also calculated using ProUCL.

The COGCC cleanup goal was calculated by multiplying the mean (from background well data) times 1.25 per Table 910-1 from the COGCC rules. A summary of pertinent statistical results and the calculated COGCC cleanup levels for chloride and sulfate are listed below:

Statistical Analysis	Chloride	Sulfate
Mean (from background well data)	41.73	665.9
COGCC cleanup goal (1.25 x background)	52.16	832.4
Standard Deviation	6.24	148.6
Sample Size	44	21

6.2.1 Sherwood #1 Wellhead

The Sherwood #1 Well Site inorganic analyte concentrations increased at monitoring well MW02 during the 2017 sampling event. Exceedances are discussed below.

- The chloride concentration detected in monitoring well SH1-MW02 exceeded the COGCC statistical regional background concentration standard of 52.16 mg/L with a measured concentration of 72.8 mg/L.

- The nitrate concentration detected in monitoring well SH1-MW02 exceeded the CDPHE groundwater standard of 10 mg/L with a measured concentration of 15 mg/L.

- The sulfate concentration detected in monitoring well SH1-MW02 exceeded the COGCC statistical regional background concentration standard of 832.4 mg/L with a measured concentration of 930 mg/L.

6.2.2 Sherwood #2 Wellhead

The Sherwood #2 Well Site inorganic analyte concentrations generally increased at the monitoring wells during the 2017 sampling event. The analytical results are summarized below.

Upgradient monitoring well, SH2-MW01:

- The chloride concentration detected in monitoring well SH2-MW01 exceeded the COGCC statistical regional background concentration standard of 52.16 mg/L with a measured concentration of 52.7 mg/L.

- The nitrate concentration detected in monitoring well SH2-MW01 exceeded the CDPHE groundwater standard of 10 mg/L with a measured concentration of 11.3 mg/L.

- The sulfate concentration detected in monitoring well SH2-MW01 exceeded the COGCC statistical regional background concentration standard of 832.4 mg/L with a measured concentration of 836 mg/L.

Downgradient monitoring well, SH2-MW02:

- The sulfate concentration detected in monitoring well SH2-MW01 exceeded the CDPHE groundwater standard of 250 mg/L with a measured concentration of 824 mg/L, but was below the COGCC statistical regional background concentration standard of 832.4 mg/L.

Downgradient monitoring well, SH2-MW03:

- The chloride concentration detected in monitoring well SH2-MW03 exceeded the COGCC statistical regional background concentration standard of 52.16 mg/L with a measured concentration of 56.3 mg/L.

- The nitrate concentration detected in monitoring well SH2-MW03 exceeded the CDPHE groundwater standard of 10 mg/L with a measured concentration of 11.5 mg/L.

- The sulfate concentration detected in monitoring well SH2-MW03 exceeded the COGCC statistical regional background concentration standard of 832.4 mg/L with a measured concentration of 833 mg/L.

6.2.3 City of Longmont #1 Wellhead

- The nitrate concentration detected in monitoring well CL1-MW03 exceeded the CDPHE groundwater standard of 10 mg/L with a measured concentration of 13.1 mg/L.

6.2.4 Serafini Gas Unit

The Serafini Gas Unit Well Site inorganic analyte concentrations increased at monitoring well MW02 for chloride during the 2017 sampling event.

- The chloride concentration detected in monitoring well SGU-MW02 exceeded the COGCC statistical regional background concentration standard of 52.16 mg/L with a measured concentration of 438 mg/L.

6.2.5 Powell #1

The Powell #1 Well Site inorganic analyte concentrations generally decreased in the monitoring wells during the 2017 sampling event, although sulfate did exceed CDPHE groundwater standards in monitoring wells MW01 and MW02. The exceedances are discussed below.

- The concentration of sulfate was detected at 370 mg/L in PL1-MW01 and at 688 mg/L in PL1-MW02, exceeding of the CDPHE groundwater standard of 250 mg/L, but below the COGCC statistical regional background standard of 886.8 mg/L.

6.2.6 Evans #6 Wellhead & Tank Battery Sites

The Evans #6 Wellhead and Tank Battery Sites' inorganic analyte concentration trends appear to be inconsistent with what was observed at nearby sites for sulfate (Evans #6 Wellhead) and sulfate and chloride (Evans #6 Tank Battery). The inorganic analytes with reported fluctuations in concentrations since the October 2013 sampling event may be attributed to the historic flood event and yearly fluctuations in groundwater levels. During the 2017 sampling event, monitoring wells that exhibited exceedances in inorganic analyte concentrations generally returned to pre-October 2013 concentrations. The analytical results are summarized below.

Evans #6 Wellhead:

- Concentrations of sulfate were detected in E6W-MW01 (1,580 mg/L), E6W-MW02 (863 mg/L), and E6W-MW03 (1,430 mg/L) all exceeding the COGCC statistical regional background standard of 832.4 mg/L.

Evans #6 Tank Battery

- Concentrations of chloride were detected in E6T-MW01 (90.6 mg/L), E6T-MW02 (83.9 mg/L), and E6T-MW03 (166 mg/L) all exceeding the COGCC statistical regional background standard of 52.16 mg/L.

- Concentrations of sulfate were detected in E6T-MW01 (1,930 mg/L), E6T-MW02 (2,960 mg/L), and E6T-MW03 (5,610 mg/L) all exceeding the COGCC statistical regional background standard of 832.4 mg/L.

Increases in concentrations could correspond to an increase in measured specific conductance and slow recharge of the wells which causes increases in turbidity (sediment in the groundwater) and inorganic compounds.

6.2.7 Domenico #1 Well Site

The Domenico #1 Well Site inorganic analyte concentrations increased slightly during the 2017 sampling event. Monitoring well specific exceedances are discussed below.

Up-gradient monitoring well, DM1-MW01:

- The chloride concentration of 76.9 mg/L is in exceedance of the COGCC statistical regional background concentration standard of 52.16 mg/L.

Cross-gradient monitoring well, DM1-MW02:

- The chloride concentration of 80.4 mg/L is in exceedance of the COGCC statistical regional background concentration standard of 52.16 mg/L.

Downgradient monitoring well, DM1-MW03:

- The chloride concentration of 121 mg/L is in exceedance of the COGCC statistical regional background concentration standard of 52.16 mg/L.

- The sulfate concentration of 589 mg/L is in exceedance of the CDPHE domestic supply drinking water standard of 250 mg/L, but below the COGCC background concentration of 832.4 mg/L.

6.2.8 Stamp 31-2C Well Site

The Stamp 31-2C Well site is not located within the Saint Vrain or Boulder Creek floodplains and did not experience the same flooding issues in 2013 as other monitoring wells in the project area. Chloride and sulfate values decreased or remained relatively stable during the 2017 sampling event as compared to the 2016 sampling event. The analytical results for the Stamp 31-2C Well site are summarized below.

- The chloride concentrations detected in monitoring wells S31-MW03 through S31-MW06 exceeded the COGCC statistical regional background concentration standard of 52.16 mg/L with measured concentrations between 76.5 mg/L and 185 mg/L. The chloride concentration detected in MW01 exceeded both the COGCC statistical regional background concentration standard and the CDPHE basic standard for groundwater of 51.32 mg/L and 250 mg/L, respectively, with a measured concentration of 637 mg/L.

- The sulfate concentration in all the sampled wells exceeded the COGCC statistical region background standard and the CDPHE basic standard for groundwater of 832.4 mg/L and 250 mg/L, respectively, with measured concentrations between 4,690 mg/L and 9,930 mg/L.

6.2.9 Rider #1 Well Site

Sulfate values decreased or remained relatively stable during the 2017 sampling event as compared to the 2016 sampling event. The analytical results for the Stamp 31-2C Well site are summarized below.

- The sulfate concentration in all the sampled wells exceeded the CDPHE basic standard for groundwater of 250 mg/L, but were below the COGCC statistical region background standard of 832.4, with measured concentrations between 259 mg/L and 326 mg/L.

6.3 General Groundwater Parameters

Specific conductance was reported in the groundwater samples ranging from 1,175 to 15,430 micro Siemens per centimeter (µmhos/cm). Generally, relatively higher concentrations of specific conductance were reported in groundwater samples with higher concentrations of alkalinity, bromide, chloride, nitrate, nitrite, sulfate and sulfide. Higher concentrations of specific

conductance general corresponds to more turbid samples which have more sediment and subsequently more inorganics from the sediment. This occurs when monitoring wells do not recharge well during purging and the formation contains clays.

Groundwater samples were reported to have a neutral pH (i.e. near 7.0), with the exception of E6T-MW03 with a pH value of 5.08, which is below the CDPHE basic standard for groundwater range of 6.5 to 8.5; pH values in all of the other wells measured during purging were reported in a range from 6.74 to 7.53, which is within the range of CDPHE's basic standard for groundwater for pH of 6.5 to 8.5.

7.1 CONCLUSIONS

Based on the scope of services described in this report and subject to the limitations described herein, Terracon concludes the following.

- Benzene was detected (0.0353 mg/L) for the second year in a row at the Serafini Gas Unit SGU-MW02 monitoring well. The concentration exceeds the CDPHE and COGCC cleanup standard of 0.005 mg/L. Methane concentrations (0.0884 mg/L) in this well have decreased since the 2016 sampling event and are below 1 mg/L. In addition, ethane was not detected during the 2017 sampling event. Based on the Terracon and Olsson LSIs, BTEX compounds were detected above soil cleanup levels in soil boring B9 and test pit 1 which was located near SGU-MW02. Concentrations of methane may be the result from natural biodegradation occurring on site. Chloride concentrations have also continued to increase in this well. The impacts to groundwater may be the result of former or existing leaks from separator lines, the former produced water pit, and loading and unloading activities, or new releases to the subsurface.

- Monitoring well PL1-MW02 at the Powell #1 site had an increased methane detection of 0.0231 mg/L over the 2016 sampling result of 0.012 mg/L; however, this concentration is below 1 mg/L.

- Monitoring wells DM1-MW01 and DM1-MW02 reported detected methane concentrations of 0.213 mg/L and 0.0152 mg/L, respectively. However, these concentrations are below 1 mg/L.

- At the Stamp 31-2C Well site, ethylbenzene was only detected in monitoring well S31-MW01; the concentration is below the COGCC standard. No other BTEX compounds were detected in 2017. Dissolved methane and ethane were detected in S31-MW01 and S31-MW03 and the concentrations have increased slightly over past sampling events.

- At the Rider #1 Well site, BTEX compounds were not detected at concentrations above the COGCC standards, however, ethylbenzene and total xylenes were measured above the laboratory detection limits in monitoring wells RD1-MW02 and RD1-MW05. Additionally, dissolved methane was detected above the laboratory detection limit in monitoring wells RD1-MW02 and RD1-MW05.

Dissolved methane in groundwater may be an indication of a release at an O&G production well site. Neither the COGCC nor the CDPHE have developed standards for methane in groundwater. The COGCC has developed standards for source water (.e.g. water wells) in the Greater Wattenberg Area (GWA). This project is located within the GWA. Water wells that are registered with Colorado Division of Water Resources (DWR), and include:

- household,
- domestic,
- livestock,
- irrigation,
- municipal/public,
- commercial,
- permitted or adjudicated springs, and
- monitoring wells installed for the purpose of complying with groundwater baseline sampling and monitoring requirements.

Section 318A.f.(8) of the COGCC Rules and Regulations for baseline sampling of water wells in the GWA states that concentrations of methane greater than 1.0 mg/L require a gas compositional and stable isotope analysis of the methane to determine the source of the methane (e.g. thermogenic, biogenic or a mixture of the two).

In general, increased chloride and sulfate concentrations correspond to increases in specific conductance and turbidity due to slow recharge of the monitoring well and the presence of clay in the formation. Clay is a smaller particle and passes through the monitoring well filter pack. Inorganics attach to sediment (e.g. clays).

8.0 RECOMMENDATIONS

Terracon recommends the continued monitoring of the Evans #6 Wellhead, Evans #6 Tank Battery, Stamp 31-2C Wellhead, Rider #1 Wellhead, Sherwood #1 Wellhead, Sherwood #2 Wellhead, City of Longmont #1 Wellhead, Serafini Gas Unit, and the Powell #1 Wellhead on an annual basis. The continued monitoring of the aforementioned sites will work to augment the existing data set. This information will be used to continuously assess the extent groundwater impacts present, track trends in the groundwater quality, and/or if sites shall be added or removed from the annual sampling list.

The Domenico #1 Wellhead was plugged and abandoned by Noble Energy, Inc. on September 30, 2013. All equipment has been removed. Terracon recommends the continued groundwater sampling at this site due to the presence of dissolved methane remaining in the onsite wells. Analytical results do not indicate and environmental impacts from BTEX compounds to groundwater at this site. Although there are concentrations of chloride in all the onsite wells above the COGCC standards, chloride concentrations are lower than or remain stable to historical concentrations.

The Rider #1 Well Site was plugged and abandoned by TOP Operating, Inc. during the winter of 2016. Terracon recommends the continued groundwater sampling at this site and that the groundwater at monitoring well RD1-MW02 and RD1-MW05 be sampled and analyzed for gas compositional and stable isotope analysis in 2017 based on the continued detection of methane in these wells.

Terracon recommends that the City of Longmont contact Top Operating to conduct additional site investigation at the Serafini Gas Unit including the south of the tank battery and between the separators and the tank battery, if possible due to the presence of high pressure underground pipe lines, to assess the source of petroleum hydrocarbon subsurface impacts. Terracon also recommends the Client consults with their legal counsel regarding potential reporting obligations to the COGCC and potential risk and liability on connection with exceedances in constituents of concern in monitoring well SGU-MW02.

9.0 REFERENCES

American Water Works Association 2014. The Potential Regulatory Implications of Strontium, March 2014.

Terracon 2012. 2012 Annual Oil & Gas Wellhead Reconnaissance Report, City of Longmont, Parks and Forestry Division, Longmont, Colorado, Terracon Project Number 25127040, August 21, 2012.

Terracon 2013a. Sampling and Analysis Plan, Groundwater Quality Monitoring Program, City of Longmont, Terracon Project Number 25127127, February 1, 2013.

Terracon 2013b. First Quarter 2013 Monitoring Report, Groundwater Quality Monitoring Program, Active Oil and Gas Well Sites, City of Longmont, Terracon Project Number 25127127, May 31, 2013.

Terracon 2013c. Third Quarter 2013 Monitoring Report, Groundwater Quality Monitoring Program, Active Oil and Gas Well Sites, City of Longmont, Terracon Project Number 25127127, December 31, 2013.

Terracon 2014. First Semi-Annual 2014 Monitoring Report, Groundwater Quality Monitoring Program, Active Oil and Gas Well Sites, City of Longmont, Terracon Project Number 25147063, October 16, 2014.

Terracon 2015. First Semi-Annual & Biennial 2015 Monitoring Report, Groundwater Quality Monitoring Program, Active Oil and Gas Well Sites, City of Longmont, Terracon Project Number 25147063, July 9, 2015.

Terracon 2016. Annual 2016 Monitoring Report, Groundwater Quality Monitoring Program, Active Oil and Gas Well Sites, City of Longmont, Terracon Project Number 25167304, August 31, 2016.

APPENDIX A
TABLES AND FIGURES

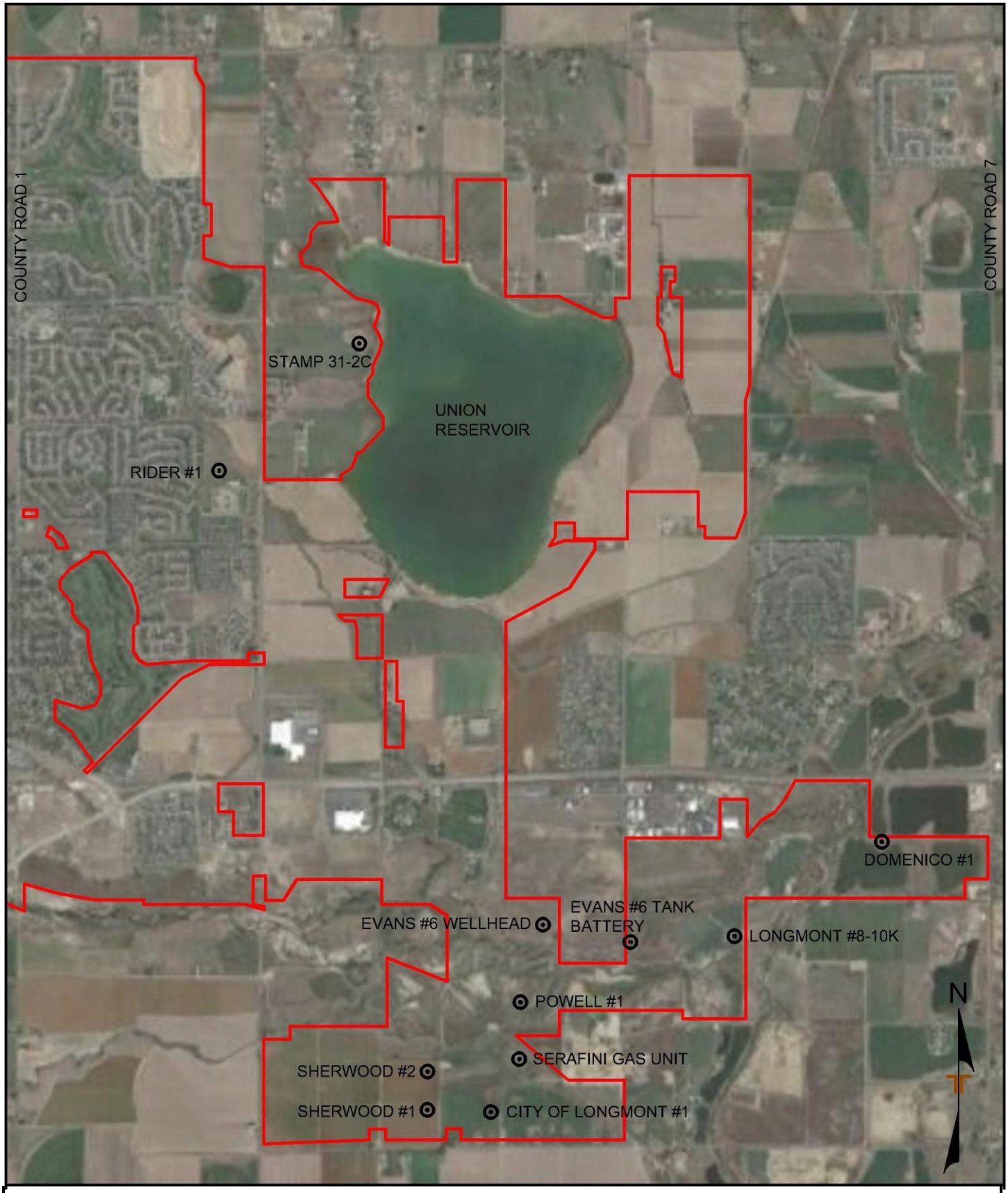


DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

0 1750' 3500' 7000'

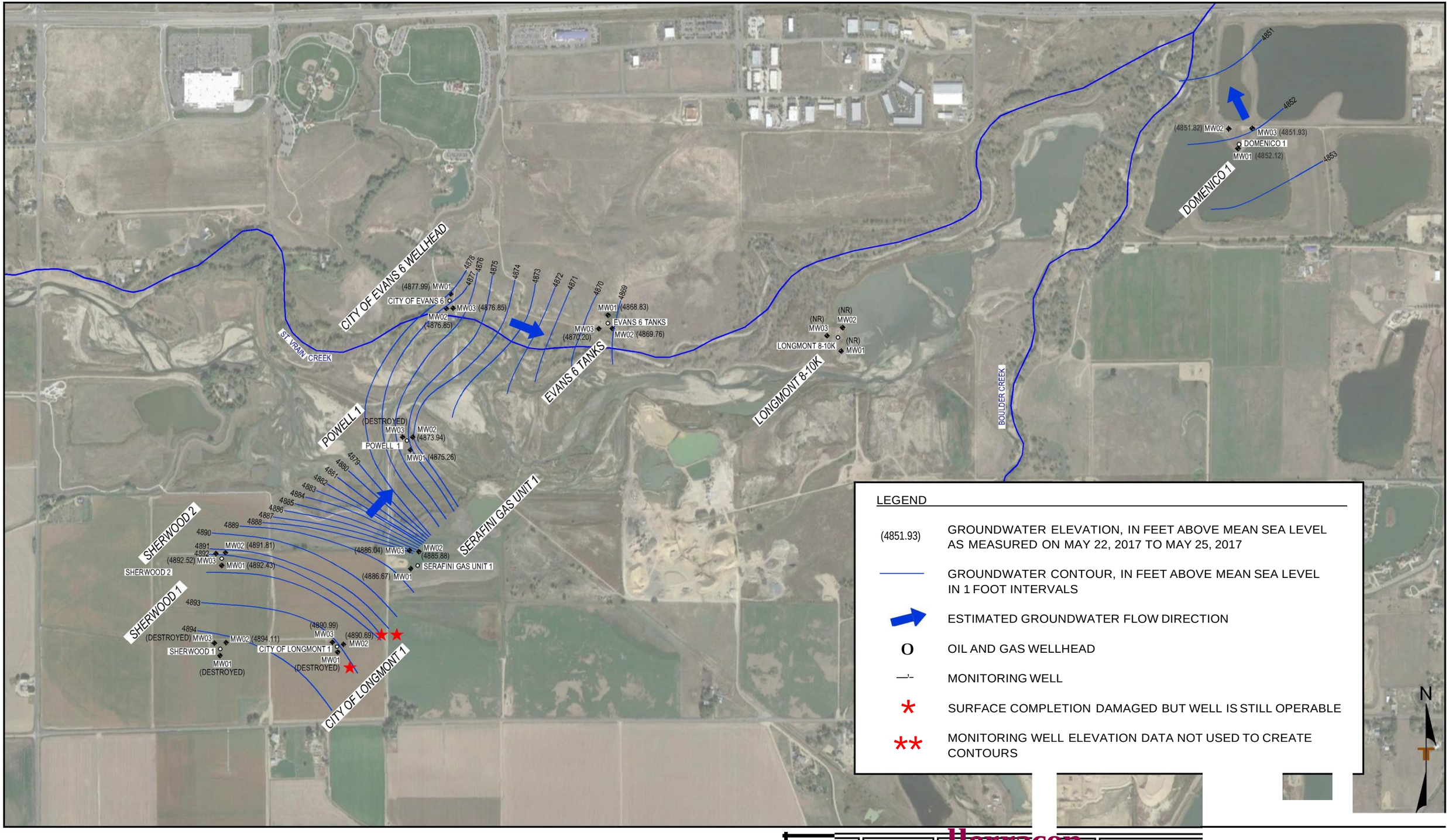
ProjectMngr MJS	Project No 22177002
Drawn By CPD	Scale AS-SHOWN
Checked By MJS	File No 22177002.DWG
Approved By MEW	Date 06.23.2017

llerracon
Consulting Engineers and Scientists
1242 BRAMWOOD PLACE LONGMONT, CO 805(11
PH. (303) 776-3921 FAX. (303) 7764041

WELL SITE LOCATIONS MAP

GROUNDWATER QUALITY MONITORING
CITY OF LONGMONT
LONGMONT, COLORADO

EXHIBIT No. 1



LEGEND

(4851.93)	GROUNDWATER ELEVATION, IN FEET ABOVE MEAN SEA LEVEL AS MEASURED ON MAY 22, 2017 TO MAY 25, 2017
	GROUNDWATER CONTOUR, IN FEET ABOVE MEAN SEA LEVEL IN 1 FOOT INTERVALS
	ESTIMATED GROUNDWATER FLOW DIRECTION
O	OIL AND GAS WELLHEAD
—'–	MONITORING WELL
*	SURFACE COMPLETION DAMAGED BUT WELL IS STILL OPERABLE
**	MONITORING WELL ELEVATION DATA NOT USED TO CREATE CONTOURS

0 500' 1000' 2000'

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

ProjectMngr	MJS	Project No	22177002
Drawn By	CPD	Scale	AS-SHOWN
Checked By	MJS	File No	22177002.DWG
Approved By	COLORADO	Date	MEW

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Consulting Engineers and Scientists
1242 BRAMWOOD PLACE LONGMONT, CO 805(11
PH. (303) 776-3921 FAX (303) 776-4041

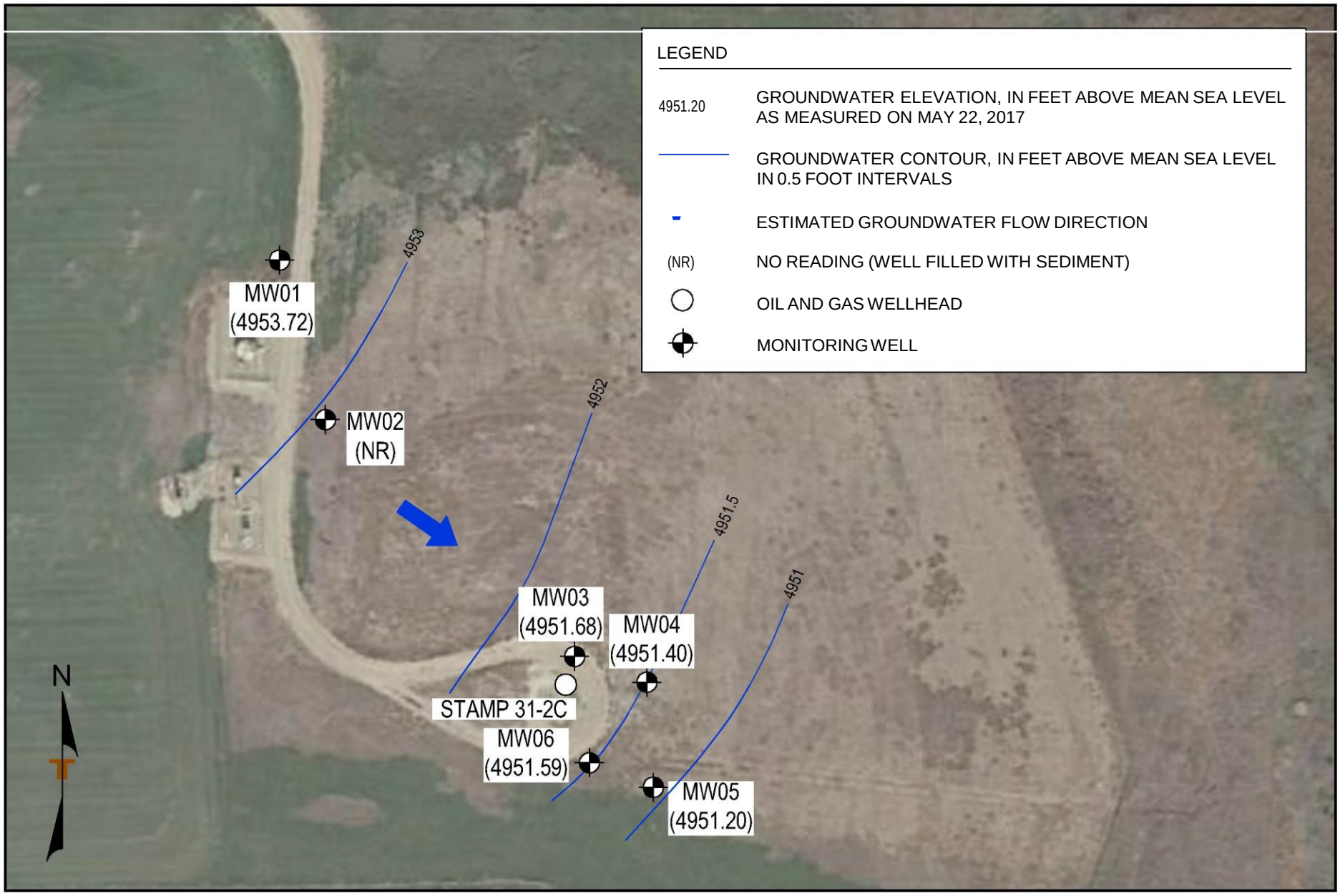
06.23.2017

POTENTIOMETRIC SURFACE MAP - VARIOUS WELL SITES

GROUNDWATER QUALITY MONITORING

CITY OF LONGMONT
LONGMONT,

EXHIBIT No. 2



0 40' 80'

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

ProjectMng r	MJS	ProjectNo.	22177002
Drawn By	CPD	Scale	AS-SHOWN
Checked By	MJS	File No	22177002.DWG
Approved B	MEW	Date	06.23.2017

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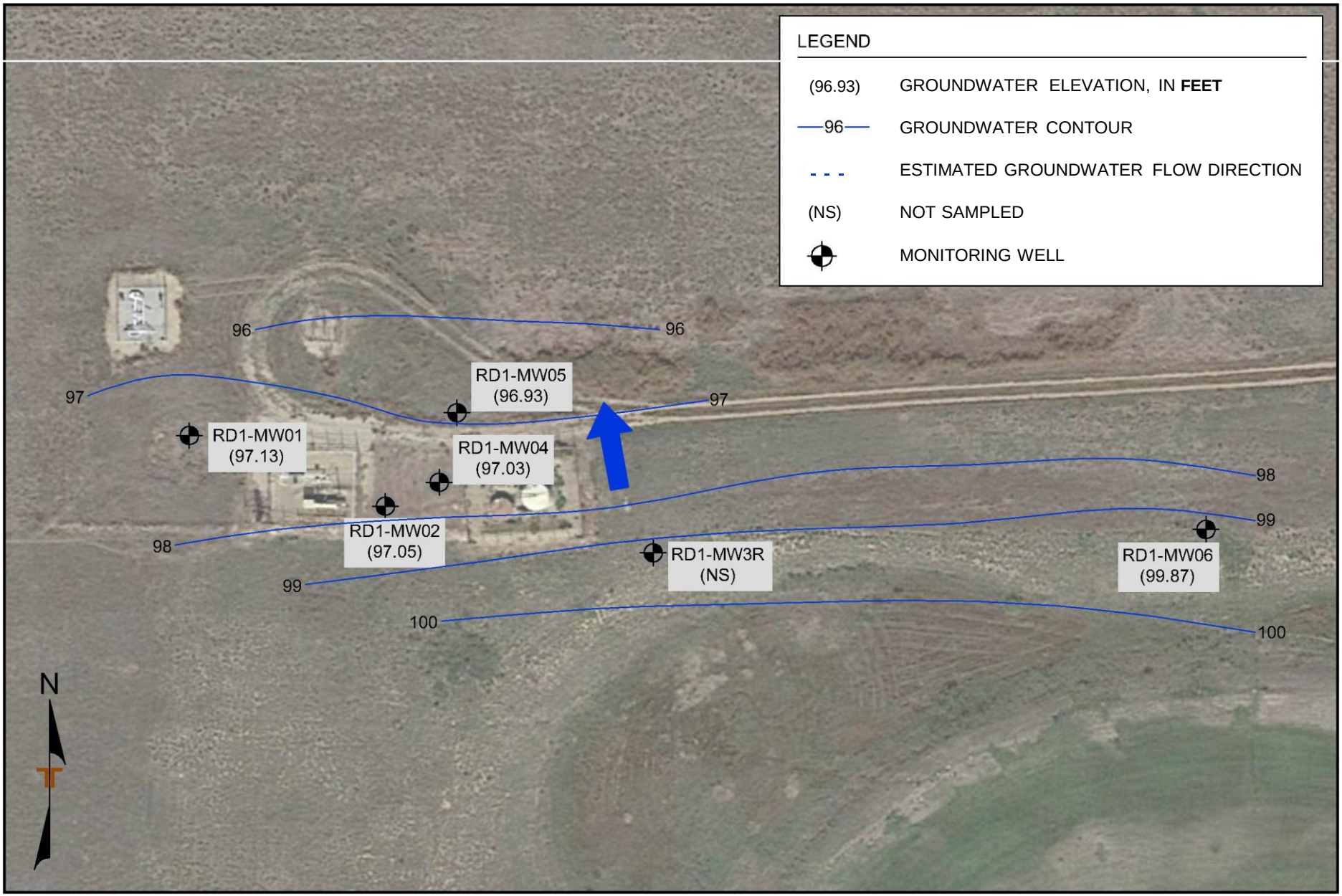
Consulting Engineers and Scientists
1242 BRAMWOOD PLACE LONGMONT, CO 805(11
PH. (303) 776-3921 FAX. (303) 7764041

POTENTIOMETRIC SURFACE MAP - STAMP 31-2C

EXHIBIT No. 3

GROUNDWATER QUALITY MONITORING
CITY OF LONGMONT
LONGMONT, COLORADO



0 30' 60' 120'

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

ProjectMngr	MJS	ProjectNo.	22177002
Drawn By	CPD	Scale	AS-SHOWN
Checked By	MJS	File No	22177002.DWG
Approved By	DAB	Date	07.07.2017

llerracon
Consulting Engineers and Scientists
1242 BRAMWOOD PLACE
LONGMONT, CO 80503
PH. (303) 776-3921
FAX. (303) 776-4041

POTENTIOMETRIC SURFACE MAP - RIDER #1

GROUNDWATER QUALITY MONITORING
CITY OF LONGMONT
LONGMONT, COLORADO

EXHIBIT No.
4

Table 1 - Groundwater Elevation Data
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

Well ID	Top of Casing Elevation[1]	Date Measured	Total Depth[2]	Depth to Groundwater[2]	Groundwater Elevation[3]
Sherwood #1 Wellhead					
SH1-MW01[4]	4902.75	3/18/2013	13.96	8.49	4894.26
		10/23/2013		6.70	4896.05
		7/28/2014		NR	
		3/30/2015		8.11	4894.64
		6/21/2016		Well Destroyed	
		5/23/2017		Well Destroyed	
SH1-MW02	4900.99	3/18/2013	14.35	7.41	4893.58
		10/23/2013		6.30	4894.69
		7/28/2014		NR	
		3/30/2015		7.23	4893.76
		6/21/2016		6.87	4894.12
		5/23/2017		6.88	4894.11
SH1-MW03[4]	4901.80	3/18/2013	14.06	7.64	4894.16
		10/23/2013		6.33	4895.47
		7/28/2014		NR	
		3/30/2015		7.35	4894.45
		6/21/2016		Well Destroyed	
		5/23/2017		Well Destroyed	
Sherwood #2 Wellhead					
SH2-MW01	4896.76	3/18/2013	10.80	5.20	4891.56
		7/28/2014		NR	
		3/30/2015		4.59	4892.17
		6/21/2016		5.04	4891.72
		5/23/2017		4.33	4892.43
SH2-MW02	4896.15	3/18/2013	9.71	5.71	4890.44
		7/28/2014		NR	
		3/30/2015		4.96	4891.19
		6/21/2016		4.95	4891.20
		5/23/2017		4.34	4891.81
SH2-MW03	4896.32	3/18/2013	12.37	5.11	4891.21
		7/28/2014		NR	
		3/30/2015		4.59	4891.73
		6/21/2016		4.61	4891.71
		5/23/2017		3.80	4892.52
City of Longmont #1 Wellhead					
CL1-MW01[5]	4896.99	3/20/2013	13.34	6.42	4890.57
		7/28/2014		NR	
		3/30/2015		6.41	4890.58
		6/21/2016		3.87	4893.12
		5/23/2017		Well Destroyed	
CL1-MW02	4896.04	3/20/2013	12.86	5.75	4890.29
		7/28/2014		NR	
		3/30/2015		5.79	4890.25
		6/22/2016		1.80	4894.24
		5/23/2017		5.35	4890.69
CL1-MW03	4896.33	3/20/2013	13.10	5.86	4890.47
		7/28/2014		NR	
		3/30/2015		5.86	4890.47
		6/21/2016		3.22	4893.11
		5/23/2017		5.34	4890.99

Table 1 - Groundwater Elevation Data
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

Well ID	Top of Casing Elevation[1]	Date Measured	Total Depth[2]	Depth to Groundwater[2]	Groundwater Elevation[3]
Serafini Gas Unit					
SGU-MW01	4892.37	3/20/2013	12.90	5.52	4886.85
		10/22/2013		3.49	4888.88
		3/30/2015		5.86	4886.51
		6/21/2016		3.68	4888.69
		5/23/2017		5.70	4886.67
SGU-MW02	4891.42	3/21/2013	8.10	5.17	4886.25
		10/22/2013		3.45	4887.97
		3/30/2015		5.07	4886.35
		6/21/2016		4.24	4887.18
		5/23/2017		5.54	4885.88
SGU-MW03	4891.72	3/21/2013	12.06	5.59	4886.13
		10/22/2013		3.59	4888.13
		3/30/2015		5.85	4885.87
		6/21/2016		3.52	4888.20
		5/23/2017		5.68	4886.04
Powell #1 Wellhead					
PL1-MW01	4885.90	3/20/2013	17.79	11.91	4873.99
		7/28/2014		NR	
		3/31/2015		12.16	4873.74
		6/22/2016		10.64	4875.26
		5/23/2017		11.40	4874.50
PL1-MW02	4885.58	3/19/2013	19.65	12.00	4873.58
		7/28/2014		NR	
		3/31/2015		12.52	4873.06
		6/22/2016		11.64	4873.94
		5/23/2017		11.15	4874.43
PL1-MW03[4]	4887.26	3/19/2013	18.06	13.04	4874.22
		7/28/2014		NR	
		3/31/2015		Well Destroyed	
		6/22/2016		Well Destroyed	
		5/23/2017		Well Destroyed	
Evans #6 Wellhead					
E6W-MW01	4882.37	3/22/2013	9.33	4.50	4877.87
		10/23/2013		4.80	4877.57
		7/28/2014		4.85	4877.52
		3/31/2015		3.92	4878.45
		6/22/2016		4.24	4878.13
		5/25/2017		4.38	4877.99
E6W-MW02	4882.45	3/22/2013	12.46	5.19	4877.26
		10/23/2013		6.50	4875.95
		7/28/2014		5.80	4876.65
		3/31/2015		5.14	4877.31
		6/22/2016		5.55	4876.90
		5/25/2017		5.60	4876.85
E6W-MW03	4881.53	3/22/2013	10.89	4.41	4877.12
		10/23/2013		5.15	4876.38
		7/28/2014		4.95	4876.58
		3/31/2015		4.24	4877.29
		6/22/2016		4.74	4876.79
		5/25/2017		4.68	4876.85

Table 1 - Groundwater Elevation Data
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

Well ID	Top of Casing Elevation[1]	Date Measured	Total Depth[2]	Depth to Groundwater[2]	Groundwater Elevation[3]
Evans #6 Tank Battery					
E6T-MW01	4879.08	3/22/2013	16.95	8.01	4871.07
		10/23/2013		8.16	4870.92
		7/28/2014		8.93	4870.15
		3/31/2015		9.75	4869.33
		6/22/2016		9.43	4869.65
		5/25/2017		10.25	4868.83
E6T-MW02	4877.68	3/22/2013	12.84	6.40	4871.28
		10/23/2013		7.47	4870.21
		7/28/2014		8.54	4869.14
		3/31/2015		8.84	4868.84
		6/22/2016		8.55	4869.13
		5/25/2017		7.92	4869.76
E6T-MW03	4878.03	3/22/2013	12.30	6.61	4871.42
		10/23/2013		7.62	4870.41
		7/28/2014		8.44	4869.59
		3/31/2015		8.62	4869.41
		6/22/2016		8.75	4869.28
		5/25/2017		7.83	4870.20
Longmont #8-10K Wellhead					
LG8-MW01	4868.80	3/22/2013	9.39	3.64	4865.16
		7/28/2014		NR	
		3/31/2015		Dry	
		6/22/2016		Dry	
		5/23/2017		NR	
LG8-MW02	4869.03	3/22/2013	9.74	4.32	4864.71
		7/28/2014		NR	
		3/31/2015		Dry	
		6/22/2016		Dry	
		5/23/2017		NR	
LG8-MW03	4869.11	3/22/2013	9.42	3.21	4865.90
		7/28/2014		NR	
		3/31/2015		Dry	
		6/22/2016		Dry	
		5/23/2017		NR	
Domenico #1 Wellsite					
DM1-MW01	4857.64	3/19/2013	11.44	7.41	4850.23
		7/29/2014		6.11	4851.53
		3/31/2015		6.33	4851.31
		6/24/2016		5.48	4852.16
		5/23/2017		5.52	4852.12
DM1-MW02	4854.17	3/19/2013	12.70	3.97	4850.20
		7/29/2014		3.18	4850.99
		4/1/2015		3.45	4850.72
		6/24/2016		2.34	4851.83
		5/23/2017		2.35	4851.82
DM1-MW03	4855.27	3/19/2013	12.82	5.15	4850.12
		7/29/2014		9.05	4846.22
		4/1/2015		3.99	4851.28
		6/24/2016		3.34	4851.93
		5/23/2017		3.50	4851.77

Table 1 - Groundwater Elevation Data
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

Well ID	Top of Casing Elevation[1]	Date Measured	Total Depth[2]	Depth to Groundwater[2]	Groundwater Elevation[3]
Stamp 31-2C Wellsite					
S31-MW01	4957.15	3/22/2013	14.13	6.00	4951.15
		10/24/2013		3.08	4954.07
		7/29/2014		2.92	4954.23
		4/1/2015		4.31	4952.84
		6/23/2016		2.78	4954.37
		5/22/2017		3.43	4953.72
S31-MW02	4958.62	3/22/2013	14.22	8.55	4950.07
		10/24/2013		3.92	4954.70
		7/29/2014		Sediment[6]	
		4/1/2015			
		6/23/2016			
		5/22/2017			
S31-MW03	4958.27	10/24/2013	13.59	4.91	4953.36
		7/29/2014		5.24	4953.03
		4/1/2015		6.30	4951.97
		6/23/2016		4.92	4953.35
		5/22/2017		6.59	4951.68
S31-MW04	4957.11	3/22/2013	14.90	9.22	4947.89
		10/24/2013		4.11	4953.00
		7/29/2014		4.41	4952.70
		4/1/2015		5.28	4951.83
		6/23/2016		4.10	4953.01
		5/22/2017		5.71	4951.40
S31-MW05	4956.89	10/24/2013	14.97	4.11	4952.78
		7/29/2014		4.61	4952.28
		4/1/2015		5.12	4951.77
		6/23/2016		4.50	4952.39
		5/22/2017		5.69	4951.20
S31-MW06	4957.57	10/24/2013	11.44	4.20	4953.37
		7/29/2014		4.62	4952.95
		4/1/2015		5.61	4951.96
		6/23/2016		4.37	4953.20
		5/22/2017		5.98	4951.59
Rider #1 Wellsite					
RD1-MW01	No Survey Information Available	7/30/2014	12.59	7.62	No Survey Information Available
		4/1/2015		8.52	
		6/23/2016		7.89	
		5/22/2017		8	
RD1-MW02		7/30/2014	12.73	7.72	
		4/1/2015		8.61	
		6/23/2016		8.05	
		5/22/2017		8.08	
RD1-MW03R		7/30/2014	14.38	7.22	
		4/1/2015		8.18	
		6/23/2016		7.65	
		5/22/2017		Destroyed	
RD1-MW04		7/30/2014	14.52	7.70	
		4/1/2015		8.58	
		6/23/2016		7.99	
		5/22/2017		8.1	
RD1-MW05		7/30/2014	14.65	7.95	
		4/1/2015		8.71	
		6/23/2016		8.12	
		5/22/2017		8.2	
RD1-MW06		7/30/2014	14.34	4.75	
		4/1/2015		5.91	
		6/23/2016		5.35	
		5/22/2017		5.31	

[1]All survey information is in Datum: NAD 83, Colorado North Zone NAVD 88

[2] Depth to groundwater is mesured in feet below top of casing

[3] Elevation in feet above mean sea level

[4/5] Wells were observed to be destroyed. Unable to measure depths to water.

[6] Filled with sediment. No water present.

NR - No Reading. Wells were not part of sampling program.

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Sherwood #1 Wellhead										
				Sample ID	SH1-MW01[1]			SH1-MW02					SH1-MW03[1]		
				Date	3/18/2013	10/23/2013	3/30/2015	3/18/2013	10/23/2013	3/30/2015	6/21/2016	5/23/2017	3/18/2013	10/23/2013	3/30/2015
Volatile Organic Compounds															
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds															
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.0066)	**0.0091**	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.0066)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)
Inorganic Parameters															
7440-70-2	Calcium, Dissolved	---	---	mg/L	**92.1**	**82.8**	**98.4**	**101**	**91.1**	**92.5**	**125**	**168**	**92.8**	**84.2**	**91.6**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.10)	ND (0.10)	ND (0.050)	ND (0.050)	ND (0.050)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**110**	**107**	**137**	**99.7**	**96.4**	**122**	**126**	**195**	**107**	**106**	**126**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**2.57**	**1.63**	**1.43**	**3.06**	**1.85**	**1.37**	**2.16**	**2.57**	**2.26**	**1.68**	**1.42**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**118**	**110**	**152**	**117**	**111**	**139**	**143**	**194**	**115**	**107**	**136**
7440-24-6	Strontium	---	---	mg/L	**5.91**	**4.56**	**2.92**	**3.47**	**2.74**	**2.38**	**3.43**	**3.80**	**2.83**	**2.51**	**2.54**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**345**	**388**	**422**	**365**	**388**	**393**	**401**	**418**	**349**	**370**	**376**
	Alkalinity, Total as CaCO3	---	---	mg/L	**345**	**388**	**422**	**365**	**388**	**393**	**401**	**418**	**349**	**370**	**376**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	**1.20**	**1.80**	ND (1.0)	**1.20**	**1.50**	ND (1.0)	ND (1.0)	ND (1.0)	**1.10**	**1.40**
16887-00-6	Chloride	52.16[3]	250	mg/L	**37.5**	**35.7**	**50.6**	**37.5**	**45.2**	**44.4**	**55.3**	**72.8**	**36.6**	**35.8**	**43.9**
	Nitrogen as Nitrate	---	10	mg/L	**8.30**	**8.60**	**11.2**	**7.90**	**10.6**	**10.5**	**9.76**	**15.00**	**5.70**	**7.80**	**9.80**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.0)	ND (0.50)	ND (0.10)	ND (0.10)	ND (0.50)	ND (0.50)	ND (0.50)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**8.40**	**8.60**	**11.2**	**8.00**	**10.6**	**10.5**	**9.76**	**15.00**	**5.80**	**7.80**	**9.80**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**486**	**415**	**621**	**431**	**428**	**545**	**592**	**930**	**452**	**425**	**568**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	NS	ND (0.050)	ND (0.050)	NS	NS	NS	ND (0.050)	ND (0.050)	NS
General Parameters															
	Specific Conductance	---	---	umhos/cm	**1,590**	**1450**	**1,923**	**1,570**	**1500**	**1,730**	**1,878**	**2,472**	**1,600**	**1440**	**1,788**
	pH	---	6.5 - 8.5	Std. Units	**7.6**	**7.0**	**7.52**	**7.5**	**7.0**	**7.58**	**7.3**	**7.37**	**7.6**	**7.0**	**7.56**

[1] Wells were observed to be destroyed. Unable to measure depths to water.
[2] The aluminum collar around the well casing was bent and the concrete surface completion was found separated, the well was not sampled.
The bentonite seal may be compromised; however, the analytical data does not indicate that the well is compromised.
[3] The COGCC cleanup standard for chloride and sulfate is 1.25 x background. Background concentrations from unimpacted wells were used to average and calculate an appropriate background concentration for this area.
[4] Filled with sediment. No water present.
[5] Samples had to be recollected for nitrite and nitrate analysis due to a shipping delay resulting in the original samples being past the hold time of 48 hours.
COGCC - Colorado Oil and Gas Conservation Commission
CDPHE - Colorado Department of Public Health and Environment
mg/L - milligrams per liter
ND - Parameter not detected above the laboratory detection limit (Detection Limit)
Bold indicates detected constituents
Yellow shading indicates constituents above COGCC Table 910-1 standards.
Gray shading indicates constituents detected above CDPHE standards
Green shading indicates the most recent analytical results.
umhos/cm - microsiemens per centimeter
M - Drinking water maximum contaminant level
NS - Not Sampled
Bkg - Background
--- indicates no regulatory standard

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Sherwood #2 Wellhead				Sherwood #2 Wellhead							
				Sample ID	SH2-MW01				SH2-MW02				SH2-MW03			
				Date	3/18/2013	3/30/2015	6/21/2016	5/23/2017	3/18/2013	3/30/2015	6/21/2016	5/23/2017	3/18/2013	3/30/2015	6/21/2016	5/23/2017
Volatile Organic Compounds																
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters																
7440-70-2	Calcium, Dissolved	---	---	mg/L	**189**	**169**	**186**	**250**	**225**	**183**	**208**	**233**	**220**	**192**	**212**	**282**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**121**	**107**	**107**	**135**	**121**	**105**	**108**	**129**	**115**	**93.9**	**97.2**	**116**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**3.86**	**1.21**	**1.91**	**2.56**	**5.72**	**3.61**	**4.36**	**3.87**	**4.69**	**5.74**	**7.09**	**11.7**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**102**	**108**	**108**	**116**	**111**	**110**	**107**	**115**	**104**	**109**	**105**	**119**
7440-24-6	Strontium	---	---	mg/L	**3.44**	**3.72**	**3.26**	**3.65**	**3.87**	**4.18**	**3.71**	**3.64**	**4.52**	**4.46**	**3.85**	**4.3**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**345**	**386**	**371**	**291**	**315**	**367**	**377**	**210**	**324**	**367**	**371**	**295**
	Alkalinity, Total as CaCO3	---	---	mg/L	**345**	**386**	**371**	**291**	**315**	**367**	**377**	**210**	**324**	**367**	**371**	**295**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**40.2**	**33.6**	**41.5**	**52.7**	**43.8**	**37.8**	**41.8**	**47.1**	**44.8**	**37.6**	**41.5**	**56.3**
	Nitrogen as Nitrate	---	10	mg/L	**11.4**	**11.0**	**16.3**	**11.3**	**13.6**	**11.8**	**15.5**	**8.13**	**13**	**11.4**	**16.9**	**11.5**
	Nitrogen as Nitrite	---	1	mg/L	**0.63**	ND (0.50)	ND (0.10)	ND (0.10)	ND (0.50)	ND (0.50)	ND (0.10)	ND (0.10)	ND (0.50)	ND (0.50)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**12.0**	**11.0**	**16.3**	**11.3**	**13.8**	**11.8**	**15.5**	**8.13**	**13.1**	**11.4**	**16.9**	**11.5**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**799**	**712**	**613**	**836**	**824**	**749**	**654**	**824**	**847**	**802**	**624**	**833**
18496-25-8	Sulfide, Total	---	---	mg/L	NS	NS	NS	NS	ND (0.050)	NS	NS	NS	ND (0.050)	NS	NS	NS
General Parameters																
	Specific Conductance	---	---	umhos/cm	**1,940**	**1,935**	**1,853**	**2,195**	**2,060**	**2,029**	**1,918**	**2,056**	**2,080**	**2,007**	**1,905**	**2,198**
	pH	---	6.5 - 8.5	Std. Units	**7.5**	**7.47**	**7.3**	**7.4**	**7.4**	**7.43**	**7.4**	**7.41**	**7.4**	**7.36**	**7.3**	**7.23**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	City of Longmont #1 Wellhead							City of Longmont #1 Wellhead			
				Sample ID	CL1-MW01[2]			CL1-MW02				CL1-MW03			
				Date	3/20/2013	3/30/2015	6/21/2016	3/20/2013	3/30/2015	6/22/2016	5/23/2017	3/21/2013	3/30/2015	6/21/2016	5/23/2017
Volatile Organic Compounds															
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds															
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters															
7440-70-2	Calcium, Dissolved	---	---	mg/L	**81.3**	**92.2**	**104**	**77**	**77**	**102**	**96.8**	**85.5**	**85.5**	**105**	**90.3**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**72.2**	**85.5**	**83**	**67.4**	**67.4**	**85.5**	**77.2**	**75.1**	**75.1**	**82.9**	**70.2**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**2.83**	**1.45**	**1.94**	**2.1**	**2.1**	**1.98**	**1.91**	**2.83**	**2.83**	**1.91**	**1.89**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**61.7**	**91.8**	**91**	**60.4**	**60.4**	**93.3**	**89.5**	**63.6**	**63.6**	**94.7**	**86.4**
7440-24-6	Strontium	---	---	mg/L	**2.38**	**2.53**	**2.77**	**4.26**	**4.26**	**3.22**	**2.24**	**3.45**	**3.45**	**2.41**	**2.01**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**377**	**427**	**393**	**354**	**354**	**372**	**416**	**389**	**389**	**380**	**381**
	Alkalinity, Total as CaCO3	---	---	mg/L	**377**	**427**	**393**	**354**	**354**	**372**	**416**	**389**	**389**	**380**	**381**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	1.4	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**34.1**	**43.5**	**42.7**	**32.7**	**32.7**	**46.7**	**44.7**	**35.3**	**35.3**	**45.7**	**44.4**
	Nitrogen as Nitrate	---	10	mg/L	**13.9**	**16.7**	**12.2**	**2.6**	**2.6**	**13**	**9.75**	**14.8**	**14.8**	**13.3**	**13.1**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.50)	ND (1.0)	ND (0.10)	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.10)	ND (0.50)	ND (0.50)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**13.9**	**16.7**	**12.2**	**2.6**	**2.6**	**13**	**9.75**	**14.9**	**14.9**	**13.3**	**13.1**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**182**	**254**	**247**	**171**	**171**	**246**	**209**	**189**	**189**	**254**	**163**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	NS	NS	ND (0.050)	ND (0.050)	NS	NS	ND (0.050)	ND (0.050)	NS	NS
General Parameters															
	Specific Conductance	---	---	umhos/cm	**1,160**	**1,390**	**1,410**	**1,090**	**1,090**	**1,402**	**1,261**	**1,130**	**1,130**	**1,394**	**1,175**
	pH	---	6.5 - 8.5	Std. Units	**7.9**	**7.51**	**7.6**	**7.9**	**7.9**	**7.3**	**7.19**	**7.7**	**7.7**	**7.4**	**7.43**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Serafini Gas Unit									
				Sample ID	SGU-MW01					SGU-MW02				
				Date	3/20/2013	10/22/2013	3/30/2015	6/21/2016	5/23/2017	3/21/2013	10/22/2013	03/30/2015	6/21/2016	5/23/2017
Volatile Organic Compounds														
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	**0.0589**	**0.0353**
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds														
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	**0.0087**	ND (0.0066)	ND (0.0066)	**0.238**	**0.0884**
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	**0.0159**	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters														
7440-70-2	Calcium, Dissolved	---	---	mg/L	**81.4**	**77.2**	**97.7**	**109**	**118**	**92.6**	**88.5**	**98.0**	**110**	**142**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	**0.208**	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	**0.381**	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**53.7**	**54.7**	**63.8**	**61.9**	**65.2**	**57.8**	**54.5**	**63.7**	**63.5**	**79.7**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**3.59**	**2.88**	**2.46**	**2.67**	**3.03**	**3.39**	**2.63**	**2.23**	**2.98**	**10.8**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**67.2**	**62.5**	**76.8**	**69.9**	**72**	**78.6**	**53.3**	**59.3**	**158**	**271**
7440-24-6	Strontium	---	---	mg/L	**2.96**	**2.32**	**2.77**	**2.02**	**1.86**	**1.72**	**3.12**	**2.31**	**2.82**	**4.16**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**328**	**345**	**392**	**364**	**400**	**359**	**364**	**420**	**401**	**482**
	Alkalinity, Total as CaCO3	---	---	mg/L	**328**	**345**	**392**	**364**	**400**	**359**	**364**	**420**	**401**	**482**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**3.29**
16887-00-6	Chloride	52.16[3]	250	mg/L	**29.8**	**30.3**	**32.8**	**37.8**	**39.3**	**34.2**	**33.2**	**31.9**	**119**	**438**
	Nitrogen as Nitrate	---	10	mg/L	**5.9**	**7.4**	**8.4**	**7.37**	**7.39**	**7.2**	**8.4**	**8.0**	**6.42**	**1.37**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.20)	ND (0.50)	ND (0.50)	ND (0.10)	ND (0.10)	ND (0.20)	ND (0.50)	ND (0.50)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**5.9**	**7.4**	**8.4**	**7.37**	**7.39**	**7.3**	**8.4**	**8.0**	**6.42**	**1.37**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**191**	**292**	**263**	**205**	**192**	**228**	**243**	**258**	**201**	**223**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	NS	NS	NS	ND (0.050)	ND (0.050)	NS	NS	NS
General Parameters														
	Specific Conductance	---	---	umhos/cm	**1,060**	**1190**	**1,322**	**1,170**	**1,201**	**1,100**	**1150**	**1,135**	**1,654**	**NS**
	pH	---	6.5 - 8.5	Std. Units	**7.8**	**7.3**	**7.51**	**7.5**	**7.33**	**7.9**	**7.3**	**7.59**	**7.3**	**NS**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Serafini Gas Unit					Powell #1 Wellhead								
				Sample ID	SGU-MW03					PL1-MW01				PL1-MW02				PL1-MW03[1]
				Date	3/21/2013	10/22/2013	3/30/2015	6/21/2016	5/23/2017	3/20/2013	3/31/2015	6/22/2016	5/23/2017	3/20/2013	3/31/2015	6/22/2016	5/23/2017	3/19/2013
Volatile Organic Compounds																		
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																		
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	**0.012**	**0.0231**	ND (0.0066)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)
Inorganic Parameters																		
7440-70-2	Calcium, Dissolved	---	---	mg/L	**88.2**	**96.1**	**112**	**142**	**137**	**95.3**	**92.1**	**284**	**104**	**106**	**129**	**131**	**143**	**86**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	**0.076**	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	**0.393**	ND (0.010)	ND (0.010)	ND (0.050)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**49**	**50.5**	**59.1**	**67.4**	**67**	**73.2**	**71.8**	**195**	**75.1**	**75.9**	**95.9**	**91.1**	**97.9**	**63**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**3.94**	**1.91**	**1.74**	**2.22**	**2.54**	**2.28**	**1.25**	**2.25**	**1.64**	**2.33**	**2.25**	**2.53**	**2.63**	**3.02**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**47.7**	**50.3**	**64**	**69.2**	**64.5**	**65.3**	**63.5**	**114**	**89.9**	**115**	**119**	**134**	**165**	**58.6**
7440-24-6	Strontium	---	---	mg/L	**4.07**	**2.47**	**2.83**	**2.33**	**2.1**	**1.82**	**1.78**	**4.88**	**1.64**	**1.83**	**2.12**	**2.12**	**1.92**	**1.9**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**632**	**365**	**416**	**375**	**434**	**295**	**259**	**198**	**235**	**311**	**318**	**304**	**321**	**296**
	Alkalinity, Total as CaCO3	---	---	mg/L	**632**	**365**	**416**	**375**	**434**	**295**	**259**	**198**	**235**	**311**	**318**	**304**	**321**	**296**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**1.1**	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**28.3**	**34.5**	**33.9**	**43.7**	**41.8**	**31.8**	**38.9**	**86.0**	**33.8**	**32.8**	**39.6**	**36.7**	**39.7**	**32.3**
	Nitrogen as Nitrate	---	10	mg/L	**4.4**	**10.1**	**8.6**	**9.91**	**9.15**	**5.9**	**10.0**	**11.2**	**9.36**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**0.58**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (1.0)	ND (1.0)	ND (0.10)	ND (0.10)	ND (0.20)	ND (1.0)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**4.4**	**10.1**	**8.6**	**9.91**	**9.15**	**5.9**	**10.0**	**11.2**	**9.36**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**0.57**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**152**	**252**	**259**	**261**	**220**	**369**	**427**	**1,270**	**370**	**484**	**633**	**616**	**688**	**265**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	NS	NS	ND (0.050)	**NS**	NS	NS	ND (0.050)	NS	NS	NS	ND (0.050)
General Parameters																		
	Specific Conductance	---	---	umhos/cm	**917**	**1160**	**1,139**	**1,346**	**1,238**	**1,280**	**1,315**	**2,583**	**1,261**	**1,480**	**1,707**	**1,638**	**2,021**	**1,090**
	pH	---	6.5 - 8.5	Std. Units	**7.6**	**7.3**	**7.57**	**7.4**	**7.13**	**7.9**	**7.1**	**6.98**	**7.28**	**7.4**	**7.19**	**7.2**	**7.19**	**7.4**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Evans #6 Wellhead											
				Sample ID	E6W-MW01						E6W-MW02					
				Date	3/22/2013	10/23/2013	7/28/2014	03/31/2015	6/22/2016	5/25/2017	3/22/2013	10/23/2013	7/28/2014	03/31/2015	6/22/2016	5/25/2017
Volatile Organic Compounds																
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	**0.0278**	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters																
7440-70-2	Calcium, Dissolved	---	---	mg/L	**183**	**281**	**206**	**207**	**187**	**332**	**207**	**329**	**187**	**181**	**226**	**167**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**126**	**182**	**133**	**136**	**115**	**187**	**175**	**279**	**139**	**150**	**182**	**130**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**6.52**	**7.58**	**6.41**	**4.36**	**4.59**	**5.64**	**10.6**	**42.4**	**22.7**	**15.3**	**19.8**	**7.94**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**157**	**236**	**181**	**172**	**164**	**222**	**212**	**419**	**189**	**188**	**235**	**179**
7440-24-6	Strontium	---	---	mg/L	**4.04**	**5.52**	**4.19**	**4.29**	**4.06**	**5.25**	**5.94**	**7.28**	**4.48**	**4.02**	**7.6**	**4.03**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**307**	**381**	**326**	**351**	**268**	**305**	**312**	**426**	**309**	**307**	**304**	**280**
	Alkalinity, Total as CaCO3	---	---	mg/L	**307**	**381**	**326**	**351**	**268**	**305**	**321**	**426**	**309**	**307**	**304**	**280**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**1.5**	**1**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**32.7**	**72.2**	**50.0**	**42.9**	**42.6**	**39.9**	**34.4**	**110**	**38.4**	**35.4**	**50.3**	**38.7**
	Nitrogen as Nitrate	---	10	mg/L	**0.44**	**5.0**	**0.84**	**0.83**	**0.351**	**3.55**	ND (0.10)	**14.5**	**2.6**	**0.58**	**2.94**	**0.685**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.20)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (1.0)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**0.44**	**5.0**	**0.84**	**0.83**	**0.351**	**3.55**	ND (0.10)	**14.5**	**2.6**	**0.58**	**2.94**	**0.685**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**987**	**1,710**	**1,130**	**1,090**	**915**	**1,580**	**1,380**	**2,630**	**1,350**	**1,160**	**1,430**	**863**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	NS	NS	NS	NS	ND (0.050)	ND (0.050)	NS	NS	NS	NS
General Parameters																
	Specific Conductance	---	---	umhos/cm	**2,070**	**4960**	**2,074**	**2,397**	**2,090**	**2,944**	**2,200**	**7000**	**2,358**	**2,472**	**2,821**	**2,076**
	pH	---	6.5 - 8.5	Std. Units	**7.6**	**6.0**	**7.2**	**7.27**	**7.2**	**6.74**	**7.8**	**6.0**	**7.27**	**7.47**	**7.3**	**7.27**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Evans #6 Wellhead						Evans #6 Tank Battery					
				Sample ID	E6W-MW03						E6T-MW01					
				Date	3/22/2013	10/23/2013	7/28/2014	03/31/2015	6/22/2016	5/25/2017	3/22/2013	10/23/2013	7/28/2014	3/31/2015	6/22/2016	5/25/2017
Volatile Organic Compounds																
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																
74-82-8	Methane	---	---	mg/L	**0.0141**	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.0066)	**0.0122**	ND (0.013)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters																
7440-70-2	Calcium, Dissolved	---	---	mg/L	**192**	**363**	**264**	**200**	**262**	**273**	**326**	**306**	**280**	**258**	**251**	**217**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**150**	**255**	**167**	**133**	**156**	**166**	**285**	**256**	**215**	**205**	**168**	**140**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**9.22**	**31.1**	**13.1**	**8.49**	**9.13**	**9.72**	**12.1**	**6.61**	**5.8**	**4.81**	**5.15**	**4.4**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**184**	**333**	**217**	**178**	**196**	**210**	**593**	**666**	**446**	**608**	**587**	**616**
7440-24-6	Strontium	---	---	mg/L	**5.73**	**7.09**	**5.34**	**4.02**	**6.61**	**4.37**	**6.14**	**4.03**	**4.54**	**4.05**	**4.85**	**2.93**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**312**	**367**	**315**	**327**	**325**	**299**	**334**	**401**	**340**	**324**	**291**	**277**
	Alkalinity, Total as CaCO3	---	---	mg/L	**312**	**367**	**315**	**327**	**325**	**299**	**334**	**401**	**340**	**324**	**291**	**277**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**1.2**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**31.1**	**96.2**	**52.4**	**40.8**	**49.0**	**36.9**	**112**	**111**	**104**	**96.5**	**86.1**	**90.6**
	Nitrogen as Nitrate	---	10	mg/L	**0.11**	**6.2**	**1.9**	**1.4**	**3.38**	**1.98**	**0.93**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.20)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**0.12**	**6.2**	**1.9**	**1.4**	**3.38**	**1.98**	**0.93**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
14808-79-8	Sulfate	832.4[3]	250	mg/L	**1,130**	**2,420**	**1,550**	**1,180**	**1,280**	**1,430**	**3,060**	**3,190**	**2,810**	**2,590**	**2,190**	**1,930**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	NS	NS	NS	NS	ND (0.050)	ND (0.050)	NS	NS	NS	NS
General Parameters																
	Specific Conductance	---	---	umhos/cm	**2,280**	**6,320**	**2,635**	**2,481**	**2,678**	**2,696**	**5,030**	**8,280**	**4,100**	**4,706**	**4,225**	**3,850**
	pH	---	6.5 - 8.5	Std. Units	**7.6**	**6.0**	**7.15**	**7.34**	**7.2**	**7.09**	**7.8**	**7.0**	**7.47**	**7.42**	**7.46**	**7.38**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Evans #6 Tank Battery											
				Sample ID	E6T-MW02						E6T-MW03					
				Date	3/22/2013	10/23/2013	7/28/2014	3/31/2015	6/22/2016	5/25/2017	3/22/2013	10/23/2013	7/28/2014	3/31/2015	6/22/2016	5/25/2017
Volatile Organic Compounds																
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																
74-82-8	Methane	---	---	mg/L	**0.0076**	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)	**0.0068**	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters																
7440-70-2	Calcium, Dissolved	---	---	mg/L	**238**	**271**	**393**	**430**	**551**	**399**	**354**	**516**	**530**	**432**	**392**	**432**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	**0.212**	ND (0.050)	**9.73**	ND (0.010)	**0.282**
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**181**	**210**	**297**	**392**	**810**	**331**	**350**	**644**	**680**	**543**	**295**	**616**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**7.41**	**6.58**	**7.56**	**7.24**	**8.74**	**7.58**	**11**	**8.43**	**7.48**	**6.25**	**6.65**	**6.34**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**247**	**334**	**356**	**563**	**1,060**	**462**	**500**	**992**	**1,010**	**840**	**490**	**824**
7440-24-6	Strontium	---	---	mg/L	**4.52**	**4.45**	**7.04**	**8.27**	**29.3**	**7.78**	**7.86**	**10.1**	**2.51**	**9.29**	**7.44**	**7.73**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**346**	**391**	**346**	**277**	**141**	**250**	**524**	**732**	**468**	**301**	**245**	ND (20.0)
	Alkalinity, Total as CaCO3	---	---	mg/L	**346**	**391**	**346**	**277**	**141**	**250**	**524**	**732**	**468**	**301**	**245**	ND (20.0)
24959-67-9	Bromide	---	---	mg/L	**1.2**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**1.3**	**1.2**	**1.1**	ND (1.0)	ND (1.0)	ND (100.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**63.9**	**68.6**	**113**	**129**	**218**	**83.9**	**103**	**249**	**254**	**165.0**	**88.1**	**166.0**
	Nitrogen as Nitrate	---	10	mg/L	ND (0.10)	**16.6**	ND (0.10)	ND (0.10)	ND (0.10)	**0.575**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**4.41**	ND (0.10)
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (1.0)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	ND (0.10)	**17**	ND (0.10)	ND (0.10)	ND (0.10)	**0.575**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**4.41**	ND (0.10)
14808-79-8	Sulfate	832.4[3]	250	mg/L	**1,560**	**1,770**	**3,080**	**3,610**	**7,560**	**2,960**	**2,650**	**5,200**	**6,240**	**4,970**	**2,930**	**5,610**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	NS	NS	NS	NS	ND (0.050)	ND (0.050)	NS	NS	NS	NS
General Parameters																
	Specific Conductance	---	---	umhos/cm	**2,960**	**5,640**	**3,968**	**5,745**	**9,390**	NS	**4,830**	**13,200**	**7,162**	**7,557**	**4,748**	**7,601**
	pH	---	6.5 - 8.5	Std. Units	**7.6**	**6.0**	**7.44**	**7.28**	**7.04**	NS	**7.4**	**6**	**7.35**	**7.16**	**7.38**	**5.08**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Longmont 8-10K Wellhead			Domenico #1 Wellsite									
				Sample ID	LG8-MW01	LG8-MW02	LG8-MW03	DM1-MW01					DM1-MW02				
				Date	3/22/2013	3/22/2013	3/22/2013	3/19/2013	7/29/2014	3/31/2015	6/24/2016	5/23/2017	3/19/2013	7/29/2014	3/31/2015	6/24/2016	5/23/2017
Volatile Organic Compounds																	
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																	
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.0066)	**0.0253**	ND (0.0066)	**0.0625**	ND (0.010)	**0.213**	**0.0071**	**0.0291**	ND (0.0066)	**0.0433**	**0.0152**
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters																	
7440-70-2	Calcium, Dissolved	---	---	mg/L	**74.5**	**85.1**	**87**	**86**	**52.7**	**33.8**	**33.1**	**55.3**	**57.7**	**114**	**82.9**	**68**	**66**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**79.1**	**88.6**	**94.1**	**93.1**	**56.9**	**53.0**	**41.1**	**69.3**	**84.8**	**93.2**	**68.6**	**58**	**55.8**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**5.87**	**5.39**	**5.65**	**3.4**	**1.64**	**1.72**	**1.9**	**2.54**	**6.21**	**6.46**	**4.67**	**5.67**	**5.55**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**106**	**131**	**122**	**254**	**175**	**145**	**78.7**	**143**	**214**	**276**	**215**	**119**	**127**
7440-24-6	Strontium	---	---	mg/L	**3.03**	**1.97**	**2.87**	**1.83**	**0.853**	**0.710**	**0.713**	**1.07**	**0.965**	**1.59**	**0.986**	**1.12**	**0.729**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**204**	**234**	**244**	**484**	**305**	**351**	**209**	**410**	**307**	**525**	**529**	**330**	**330**
	Alkalinity, Total as CaCO3	---	---	mg/L	**204**	**234**	**244**	**484**	**305**	**351**	**209**	**410**	**307**	**525**	**529**	**330**	**330**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	**4.8**	**3**	**2.1**	ND (1.0)	**1.66**	**3.4**	**4.6**	**4.1**	**1.25**	**1.15**
16887-00-6	Chloride	52.16[3]	250	mg/L	**40.1**	**42.9**	**42.1**	**136**	**92.0**	**72.2**	**48.1**	**76.9**	**123**	**157**	**112**	**61.1**	**80.4**
	Nitrogen as Nitrate	---	10	mg/L	**0.23**	**0.28**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**1.4**	ND (0.10)	ND (0.10)	**0.44**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**0.13**	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**0.24**	**0.29**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**1.6**	ND (0.10)	ND (0.10)	**0.44**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**496**	**548**	**530**	**494**	**373**	**183**	**122**	**180**	**492**	**685**	**339**	**185**	**185**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	NS	NS	NS	NS	ND (0.050)	NS	NS	NS	NS
General Parameters																	
	Specific Conductance	---	---	umhos/cm	**1,350**	**1,540**	**1,530**	**1,970**	**1,023**	**1,189**	**801**	**1,271**	**1,720**	**2,215**	**1,750**	**1,176**	**1,217**
	pH	---	6.5 - 8.5	Std. Units	**7.5**	**7.6**	**7.4**	**7.5**	**7.36**	**7.52**	**7.27**	**7.53**	**7.5**	**7.13**	**7.32**	**7.01**	**7.32**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite												Stamp 31-2C Wellsite	
				Sample ID	DM1-MW03					S31-MW01						S31-MW02[4]	
				Date	3/19/2013	7/29/2014	4/1/2015	6/24/2016	5/23/2017	3/22/2013	10/24/2013	7/29/2014	4/1/2015	6/23/2016	5/22/2017	3/22/2013	10/24/2013
Volatile Organic Compounds																	
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	**0.0014**	ND (0.0010)	ND (0.0010)	**0.0946**	**0.0549**
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	**0.0022**	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	**0.0102**
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	**0.011**	**0.186**	ND (0.0010)	**0.00648**	**0.0232**	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																	
74-82-8	Methane	---	---	mg/L	ND (0.0066)	**0.0119**	ND (0.0066)	ND (0.010)	ND (0.010)	**0.0137**	**0.101**	**0.142**	**0.372**	**0.262**	**0.318**	**0.0323**	**0.0506**
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	**0.0094**	**0.0245**	**0.0145**	**0.0119**	**0.0169**
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)
Inorganic Parameters																	
7440-70-2	Calcium, Dissolved	---	---	mg/L	**99.2**	**88.7**	**116**	**160**	**145**	**365**	**340**	**356**	**318**	**434**	**416**	**377**	**352**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	**0.196**	**0.192**	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**55.1**	**51.5**	**70.3**	**86**	**77.5**	**1,400**	**814**	**986**	**687**	**1,270**	**1,200**	**872**	**655**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**3.18**	**1.76**	**1.96**	**2.4**	**2.25**	**26.5**	**14.5**	**16.2**	**10.4**	**13.8**	**13.3**	**18.4**	**12.3**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**161**	**145**	**167**	**203**	**193**	**2,850**	**2,060**	**2,680**	**2,260**	**2,900**	**2,880**	**1,940**	**1,600**
7440-24-6	Strontium	---	---	mg/L	**2.14**	**1.11**	**1.12**	**1.8**	**1.28**	**9.7**	**8.01**	**8.99**	**11.9**	**16.4**	**10**	**7.99**	**6.28**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (40.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**284**	**275**	**287**	**288**	**258**	**606**	**642**	**829**	**1,120**	**762**	**753**	**860**	**771**
	Alkalinity, Total as CaCO3	---	---	mg/L	**284**	**275**	**287**	**288**	**258**	**606**	**642**	**829**	**1,120**	**762**	**753**	**860**	**771**
24959-67-9	Bromide	---	---	mg/L	**2.2**	**2.7**	**2.8**	**2.06**	**1.31**	**1.8**	**3.6**	**3.1**	**8.0**	ND (1.0)	ND (500.0)	**1.5**	**2.4**
16887-00-6	Chloride	52.16[3]	250	mg/L	**91.5**	**91.1**	**108.0**	**110**	**121**	**381**	**369**	**725**	**762**	**699**	**637**	**150**	**181**
	Nitrogen as Nitrate	---	10	mg/L	**0.27**	**2.8**	**3.5**	**4.38**	**5.83**	**2.8**	**1.5**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.10)	ND (0.20)	ND (0.10)	ND (0.10)	**0.32**	**0.16**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**0.3**	**2.8**	**3.5**	**4.38**	**5.83**	**3.1**	**1.6**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
14808-79-8	Sulfate	832.4[3]	250	mg/L	**448**	**423**	**577**	**604**	**589**	**13,200**	**8,340**	**8,930**	**7,340**	**11,200**	**9,930**	**9,110**	**6,330**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	NS	NS	NS	NS	ND (0.050)	ND (0.050)	NS	NS	NS	NS	ND (0.050)	ND (0.050)
General Parameters																	
	Specific Conductance	---	---	umhos/cm	**1,640**	**1,293**	**1,722**	**2,031**	**1,862**	**17,200**	**5,670**	**11,866**	**12,985**	**15,456**	**15,430**	**12,500**	**4,060**
	pH	---	6.5 - 8.5	Std. Units	**7.4**	**7.09**	**7.11**	**7.21**	**7.02**	**7.5**	**7.2**	**7.13**	**7.21**	**7.04**	**7.26**	**7.2**	**7**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite Sample ID	S31-MW03					S31-MW04						Stamp 31-2C Wel
				Date	10/24/2013	7/29/2014	4/1/2015	6/23/2016	5/22/2017	3/22/2013	10/24/2013	7/29/2014	7/31/2014	4/1/2015	6/23/2016	5/22/2017
Volatile Organic Compounds																
71-43-2	Benzene	0.005	0.005	mg/L	**0.0062**	**0.0018**	ND (0.0010)	**0.00115**	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	**0.0013**	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	**0.0012**	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	NS	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds																
74-82-8	Methane	---	---	mg/L	**0.0485**	**0.111**	**0.104**	**0.171**	**0.319**	ND (0.0066)	ND (0.0066)	ND (0.0066)	NS	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	**0.0076**	**0.0236**	**0.0228**	**0.016**	**0.19**	ND (0.0062)	ND (0.0062)	ND (0.0062)	NS	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	NS	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters																
7440-70-2	Calcium, Dissolved	---	---	mg/L	**362**	**383**	**405**	**466**	**438**	**383**	**345**	NS	**382**	**382**	**437**	**410**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	**0.204**	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	**0.216**	NS	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**814**	**750**	**711**	**858**	**743**	**759**	**710**	NS	**796**	**776**	**888**	**765**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**7.83**	**8.72**	**9.83**	**8.44**	**8.65**	**19.6**	**13.4**	NS	**10.6**	**12.2**	**10.3**	**10.3**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**1,860**	**1,520**	**1,490**	**1,720**	**1,510**	**1,380**	**1,660**	NS	**1,560**	**1,530**	**1,660**	**1,560**
7440-24-6	Strontium	---	---	mg/L	**11.5**	**9.85**	**9.15**	**12.1**	**9.34**	**9.55**	**7.7**	NS	**8.43**	**9.03**	**10.7**	**8.45**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (40.0)	ND (40.0)	ND (40.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	NS	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**1,340**	**1,410**	**1,790**	**1,360**	**1,280**	**480**	**497**	**480**	NS	**528**	**485**	**554**
	Alkalinity, Total as CaCO3	---	---	mg/L	**1,340**	**1,410**	**1,790**	**1,360**	**1,280**	**480**	**497**	**480**	NS	**528**	**485**	**554**
24959-67-9	Bromide	---	---	mg/L	**2.3**	**1.8**	**1.7**	ND (1.0)	ND (1.0)	**4.4**	**1.5**	**2.4**	NS	**2.8**	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**253**	**176**	**162**	**147**	**118**	**85.2**	**75.1**	**105**	NS	**119**	**127**	**185**
	Nitrogen as Nitrate	---	10	mg/L	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**1.9**	**0.46**	**0.75**	NS	**1.3**	**3.12**	ND (0.10)
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**0.21**	ND (0.10)	ND (0.10)	NS	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	**2.1**	**0.46**	**0.75**	NS	**1.3**	**3.12**	ND (0.10)
14808-79-8	Sulfate	832.4[3]	250	mg/L	**7,050**	**6,480**	**5,860**	**6,870**	**5,770**	**7,180**	**6,710**	**6,960**	NS	**7,100**	**8,050**	**6,870**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	NS	NS	NS	NS	ND (0.050)	ND (0.050)	NS	NS	NS	NS	NS
General Parameters																
	Specific Conductance	---	---	umhos/cm	**4,760**	**8,796**	**10,227**	**10,812**	**9,593**	**9,980**	**4,250**	**8,258**	**10,164**	**10,363**	**10,789**	**10,020**
	pH	---	6.5 - 8.5	Std. Units	**7.1**	**7.09**	**7.01**	**7.15**	**7.18**	**7.5**	**7.3**	**7.42**	**7.49**	**7.36**	**7.28**	**7.43**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	site						Stamp 31-2C Wellsite				
				Sample ID	S31-MW05						S31-MW06				
				Date	10/24/2013	7/29/2014	7/30/2014	4/1/2015	6/23/2016	5/22/2017	10/24/2013	7/29/2014	4/1/2015	6/23/2016	5/22/2017
Volatile Organic Compounds															
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0050)	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	NS	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds															
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	NS	ND (0.0066)	ND (0.010)	ND (0.010)	ND (0.0066)	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	NS	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	NS	ND (0.0062)	ND (0.013)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters															
7440-70-2	Calcium, Dissolved	---	---	mg/L	**361**	NS	**362**	**381**	**422**	**411**	**366**	**386**	**372**	**454**	**421**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	**0.0794**	NS	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**627**	NS	**554**	**570**	**922**	**548**	**497**	**554**	**605**	**870**	**589**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**12**	NS	**9.36**	**10.7**	**8.95**	**9.09**	**11.1**	**9.16**	**11.0**	**9.61**	**9.49**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**1,250**	NS	**1,030**	**1,020**	**1,670**	**996**	**1,120**	**1,010**	**1,110**	**1,430**	**1,150**
7440-24-6	Strontium	---	---	mg/L	**6.94**	NS	**7.14**	**7.12**	**9.55**	**6.93**	**6.74**	**7.13**	**8.28**	**11.8**	**8.2**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	NS	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**464**	**434**	NS	**468**	**535**	**523**	**485**	**465**	**494**	**527**	**531**
	Alkalinity, Total as CaCO3	---	---	mg/L	**464**	**434**	NS	**468**	**535**	**523**	**485**	**465**	**494**	**527**	**531**
24959-67-9	Bromide	---	---	mg/L	**1.1**	**1.4**	NS	**1.4**	ND (1.0)	ND (1.0)	**1**	**1.5**	**1.5**	**ND (1.0)**	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**60.4**	**59.4**	NS	**64.8**	**106**	**76.5**	**56.5**	**66.7**	**77.6**	**131**	**81.4**
	Nitrogen as Nitrate	---	10	mg/L	**0.17**	**0.23**	NS	**0.43**	**0.177**	ND (0.10)	ND (0.10)	ND (0.10)	**0.60**	**0.621**	ND (10.0)
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.10)	NS	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**0.17**	**0.23**	NS	**0.44**	**0.177**	ND (0.10)	ND (0.10)	ND (0.10)	**0.60**	**0.621**	ND (10.0)
14808-79-8	Sulfate	832.4[3]	250	mg/L	**6,060**	**5,740**	NS	**5,250**	**9,090**	**4,690**	**5,380**	**5,540**	**5,690**	**6,980**	**5,400**
18496-25-8	Sulfide, Total	---	---	mg/L	ND (0.050)	NS	NS	NS	NS	NS	ND (0.050)	NS	NS	NS	NS
General Parameters															
	Specific Conductance	---	---	umhos/cm	**3,770**	**6,148**	NS	**7,915**	**11,864**	**7,564**	**3,440**	**6,147**	**8,375**	**9,450**	**8,013**
	pH	---	6.5 - 8.5	Std. Units	**7.2**	**7.37**	NS	**7.29**	**7.26**	**7.37**	**7.2**	**7.33**	**7.26**	**7.08**	**7.08**

Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

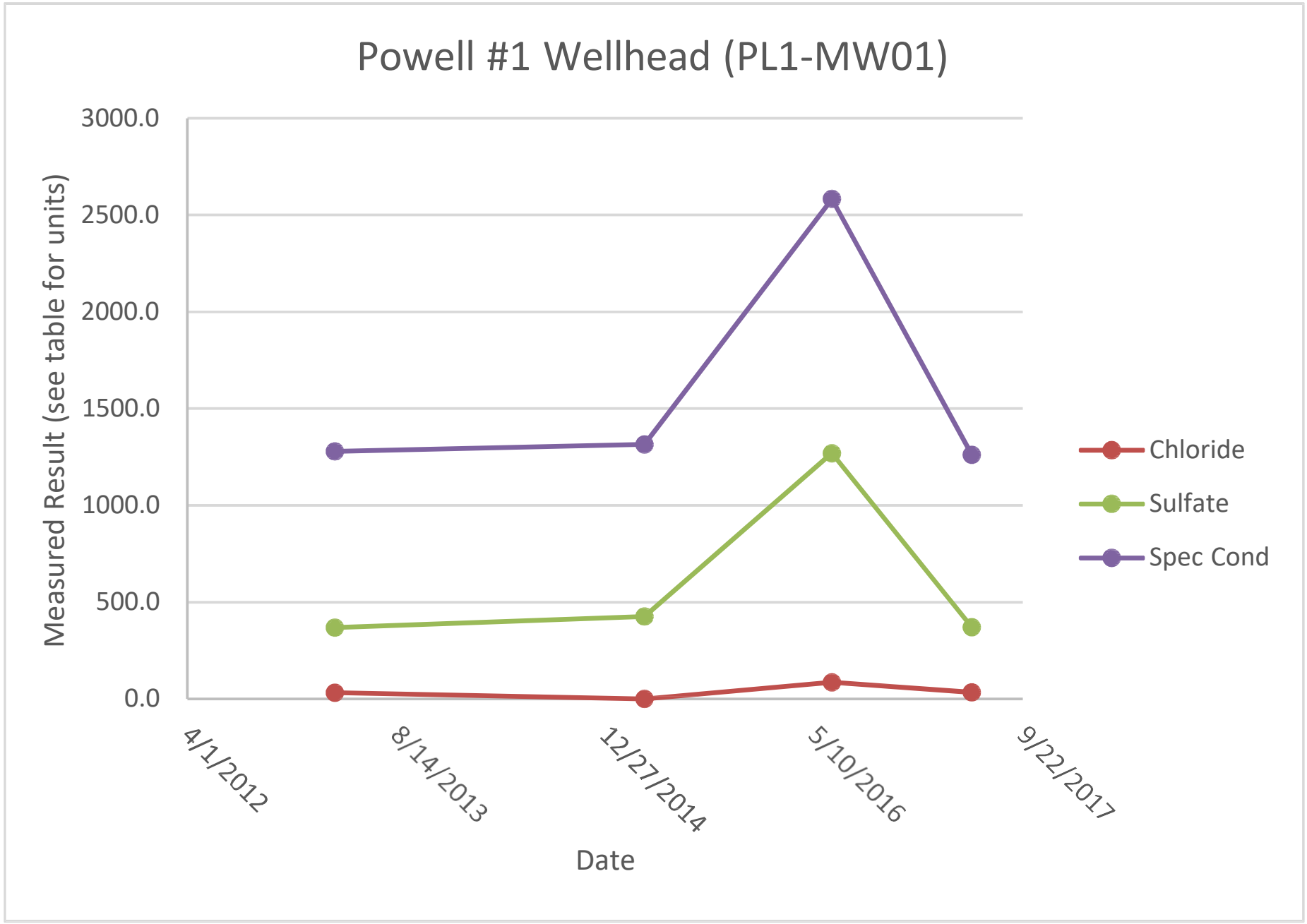
CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Rider #1 Wellsite									
				Sample ID	RD1-MW01					RD1-MW02				
				Date	7/30/2014	4/1/2015	6/23/2016	7/8/2016[5]	5/22/2017	7/30/2014	4/1/2015	6/23/2016	7/8/2016[5]	5/22/2017
Volatile Organic Compounds														
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0050)	NS	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	NS	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	**0.00525**
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	NS	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	NS	**0.048**
Other Organic Compounds														
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.010)	NS	ND (0.01)	**0.0094**	**0.0392**	**0.119**	NS	**0.176**
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)
Inorganic Parameters														
7440-70-2	Calcium, Dissolved	---	---	mg/L	**86.9**	**93.7**	**107**	NS	**102**	**88**	**88.7**	**105**	NS	**100**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.010)	NS	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	NS	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**74.8**	**80.0**	**82.6**	NS	**78.5**	**80.8**	**80.6**	**85.6**	NS	**76.4**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**2.78**	**1.90**	**2.57**	NS	**2.2**	**1.89**	**1.73**	**1.99**	NS	**2.23**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**127**	**120**	**129**	NS	**122**	**104**	**104**	**109**	NS	**107**
7440-24-6	Strontium	---	---	mg/L	**3.18**	**3.07**	**4.81**	NS	**3.1**	**3.06**	**2.67**	**3.69**	NS	**3.04**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	NS	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	NS	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**407**	**430**	**389**	NS	**436**	**471**	**437**	**504**	NS	**416**
	Alkalinity, Total as CaCO3	---	---	mg/L	**407**	**430**	**389**	NS	**436**	**471**	**437**	**504**	NS	**416**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**34.5**	**32.0**	**36.2**	**36.9**	**37.8**	**31.8**	**34.5**	**41.1**	**42.0**	**38.4**
	Nitrogen as Nitrate	---	10	mg/L	**4.8**	**4.9**	NS	**5.02**	**4.78**	**3.8**	**3.8**	NS	**2.94**	**4.12**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.20)	NS	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.20)	NS	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**4.8**	**4.9**	NS	**5.02**	**4.78**	**3.8**	**3.8**	NS	**2.94**	**4.12**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**323**	**365**	**366**	**359**	**326**	**305**	**336**	**329**	**313**	**281**
18496-25-8	Sulfide, Total	---	---	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
General Parameters														
	Specific Conductance	---	---	umhos/cm	**1,115**	**1,438**	**1,495**	**1,458**	**1,438**	**1,099**	**1,376**	**1,439**	**1,461**	**1,363**
	pH	---	6.5 - 8.5	Std. Units	**7.03**	**7.41**	**7.21**	**6.99**	**7.37**	**7.21**	**7.37**	**7.23**	**7.11**	**7.3**

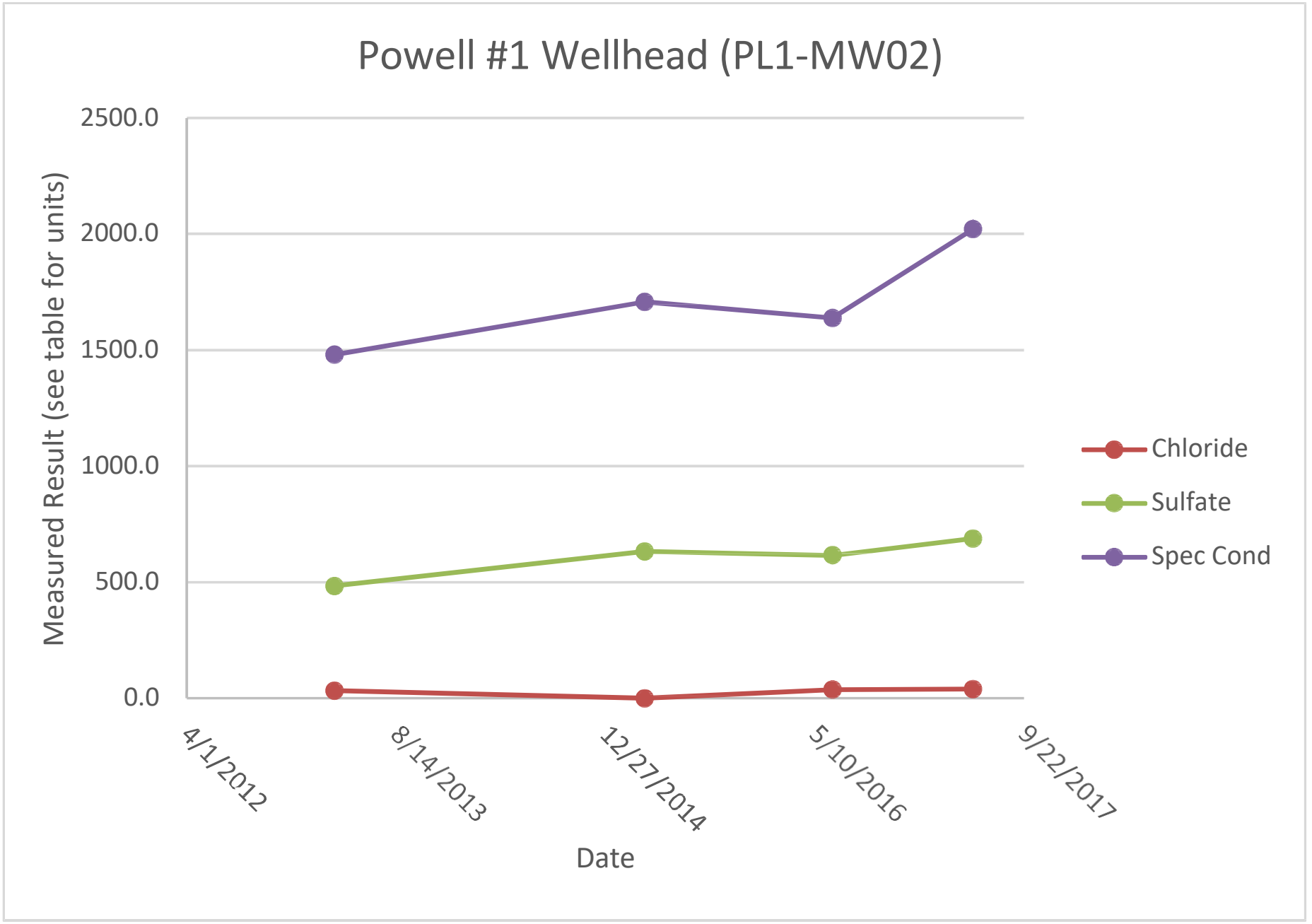
Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

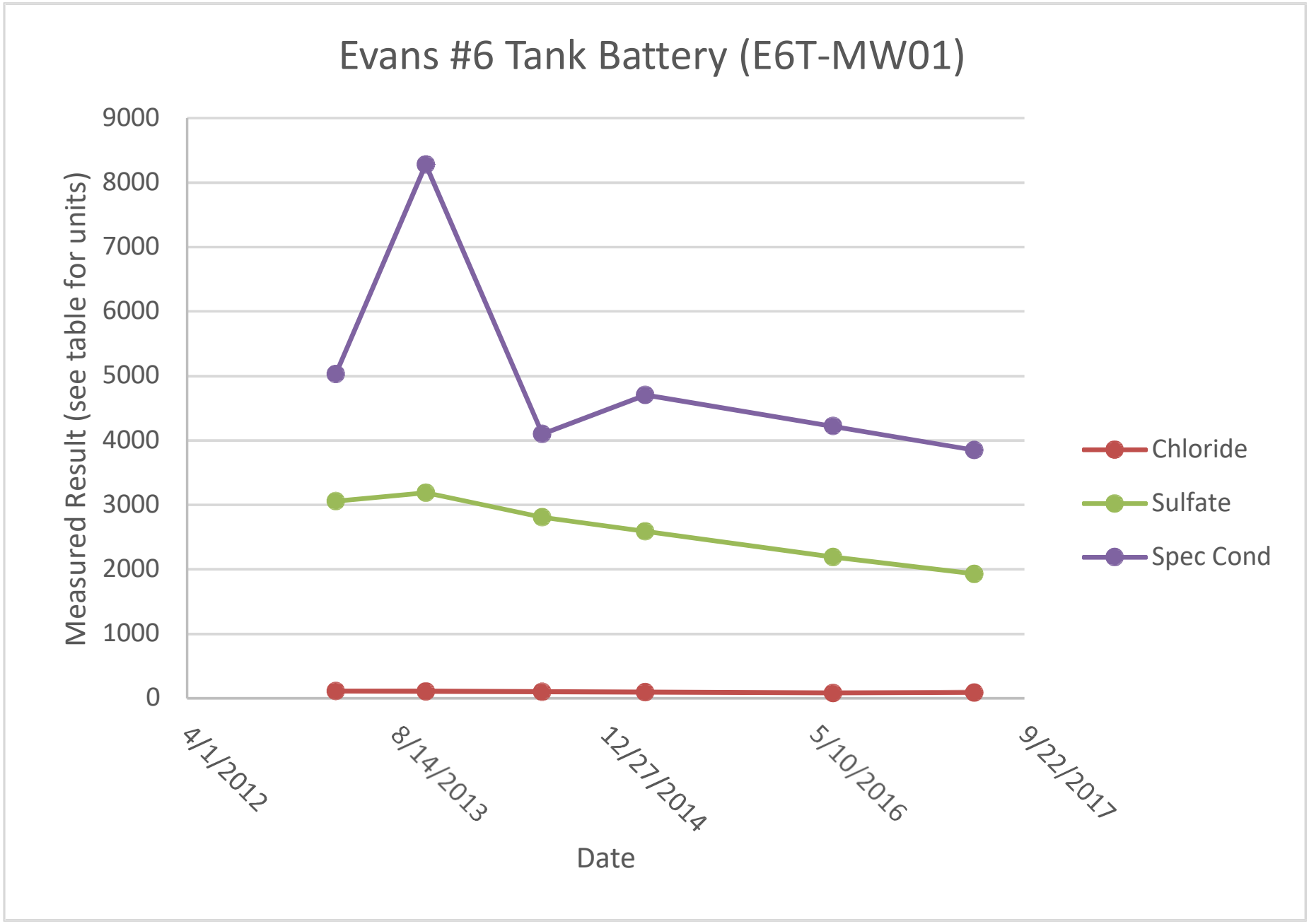
CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite	Rider #1 Wellsite												
				Sample ID	RD1-MW03R[1]			RD1-MW04					RD1-MW05				
				Date	7/30/2014	4/1/2015	6/23/2016	7/30/2014	4/1/2015	6/23/2016	7/8/2016[5]	5/22/2017	7/30/2014	4/1/2015	6/23/2016	7/8/2016[5]	5/22/2017
Volatile Organic Compounds																	
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	NS	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.010)	ND (0.0010)	ND (0.0050)	NS	ND (0.0050)	ND (0.0010)	ND (0.0010)	ND (0.0050)	NS	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	**0.0025**	ND (0.0010)	**0.0377**	**0.0778**	**0.0021**	**0.081**	NS	ND (0.0010)	**0.0088**	ND (0.0010)	ND (0.0010)	NS	**0.00112**
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	**0.0133**	ND (0.0030)	**0.0182**	**1.14**	**0.0253**	**1.12**	NS	ND (0.0030)	**0.0594**	ND (0.0030)	ND (0.0030)	NS	**0.00812**
Other Organic Compounds																	
74-82-8	Methane	---	---	mg/L	**0.0347**	**0.0734**	**0.457**	**0.0316**	**0.0092**	**0.571**	NS	ND (0.010)	**0.406**	**0.0067**	**1.12**	NS	**0.0449**
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)	ND (0.0062)	ND (0.0062)	ND (0.013)	NS	ND (0.013)
Inorganic Parameters																	
7440-70-2	Calcium, Dissolved	---	---	mg/L	**84.8**	**85.6**	**99.8**	**92.4**	**91.0**	**106**	NS	**95.9**	**82.1**	**87.2**	**101**	NS	**96.8**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	NS	ND (0.010)	ND (0.050)	ND (0.050)	ND (0.010)	NS	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**78.2**	**79.7**	**83.4**	**81.4**	**80.3**	**85.6**	NS	**78.3**	**76.2**	**78.6**	**81.8**	NS	**76.8**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**2.12**	**2.00**	**2.24**	**2.33**	**2.07**	**2.16**	NS	**1.93**	**2.47**	**2.08**	**2.4**	NS	**2.38**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**100**	**102**	**104**	**114**	**112**	**119**	NS	**104**	**102**	**108**	**109**	NS	**103**
7440-24-6	Strontium	---	---	mg/L	**3.53**	**2.94**	**10.4**	**3.37**	**2.85**	**4.27**	NS	**2.99**	**3.08**	**2.82**	**8.14**	NS	**3.66**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	NS	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	NS	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**555**	**423**	**420**	**552**	**419**	**456**	NS	**419**	**584**	**407**	**416**	NS	**409**
	Alkalinity, Total as CaCO3	---	---	mg/L	**555**	**423**	**420**	**552**	**419**	**456**	NS	**419**	**584**	**407**	**416**	NS	**409**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**31.5**	**32.5**	**35.9**	**33.7**	**34.5**	**39.6**	**39.7**	**38.7**	**31.8**	**30.1**	**37.1**	**42.1**	**37.5**
	Nitrogen as Nitrate	---	10	mg/L	**3.8**	**3.6**	NS	**4.2**	**4.9**	NS	**2.98**	**3.62**	**3.7**	**4.9**	NS	**3.98**	**3.73**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.20)	NS	ND (0.10)	ND (0.20)	NS	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.20)	NS	ND (0.10)	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**3.8**	**3.7**	NS	**4.2**	**4.9**	NS	**2.98**	**3.62**	**3.7**	**4.9**	NS	**3.98**	**3.73**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**290**	**310**	**321**	**320**	**367**	**339**	**334**	**277**	**291**	**335**	**343**	**310**	**278**
18496-25-8	Sulfide, Total	---	---	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
General Parameters																	
	Specific Conductance	---	---	umhos/cm	**1,028**	**1,318**	**1,364**	**1,109**	**1,396**	**1,473**	**1,546**	**1,320**	**1,045**	**1,352**	**1,376**	**1,400**	**1,359**
	pH	---	6.5 - 8.5	Std. Units	**7.35**	**7.39**	**7.24**	**7.2**	**7.39**	**7.19**	**7.1**	**7.16**	**7.31**	**7.4**	**7.14**	**7.33**	**7.25**

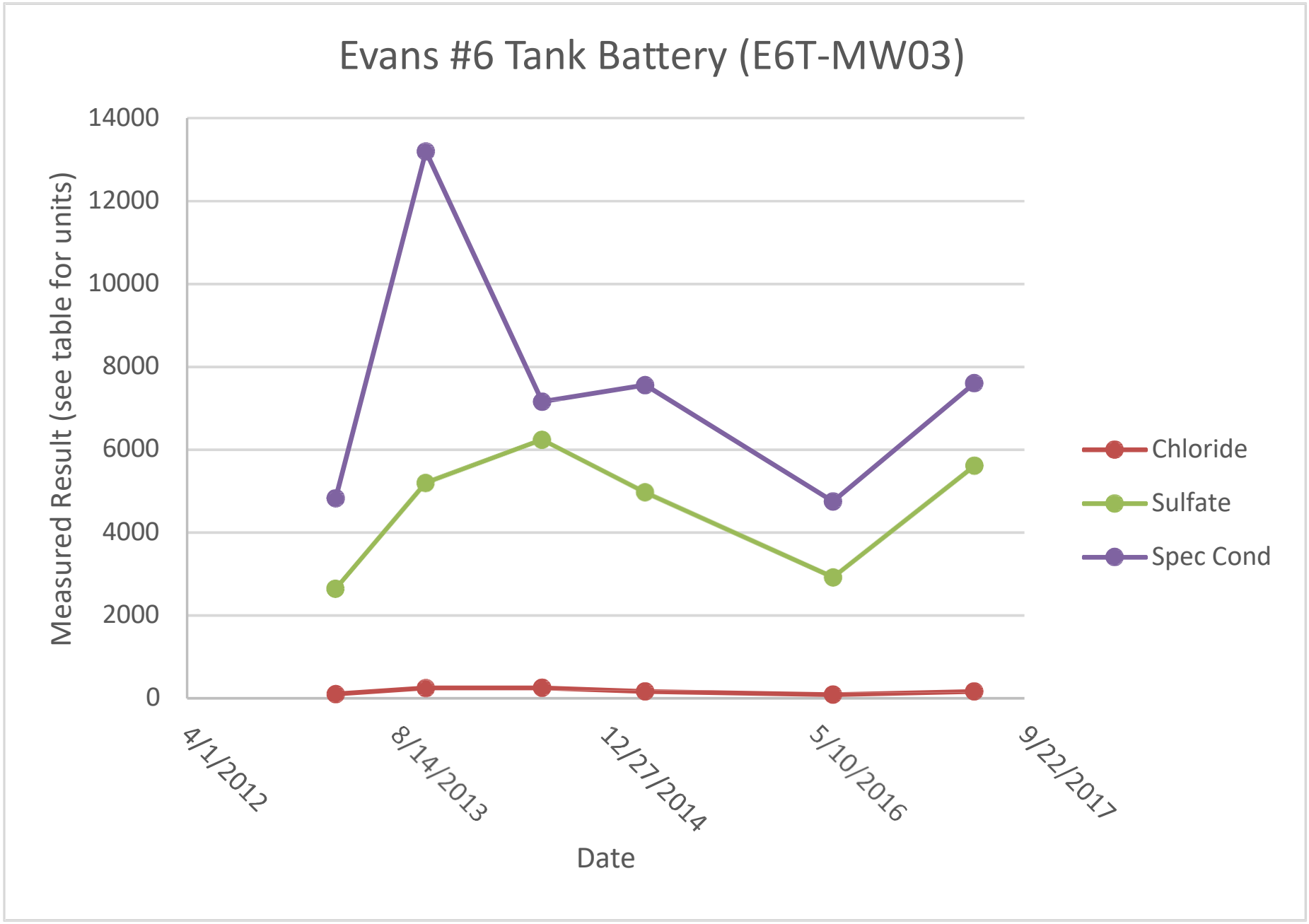
Table 2 - Groundwater Analytical Results
City of Longmont - Groundwater Quality Monitoring
Project Number 22177002

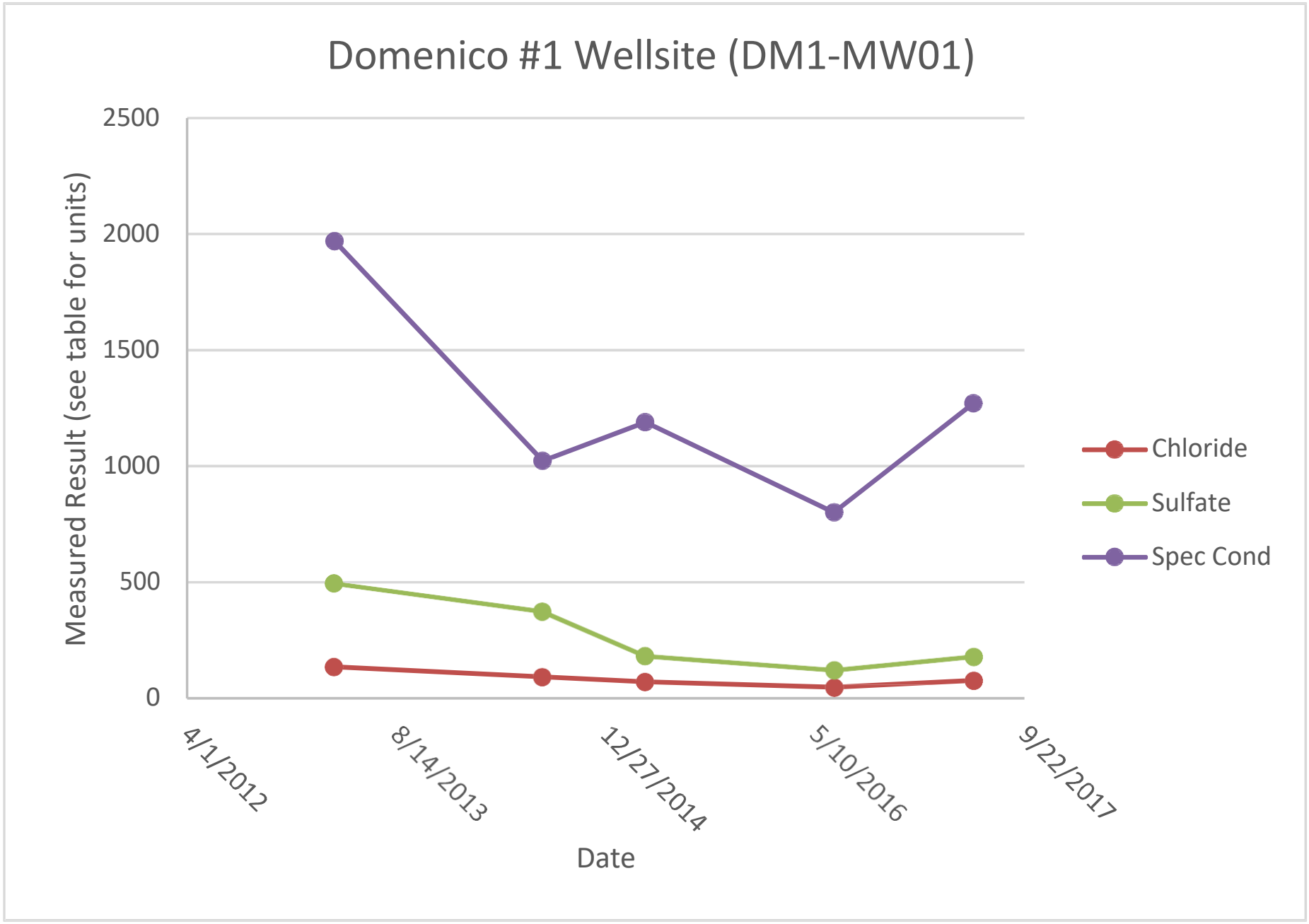
CAS #	Parameter	COGCC Table 910-1	CDPHE Basic Standards for Groundwater	Wellsite Sample ID	RD1-MW06			
				Date	7/30/2014	4/1/2015	6/23/2016	5/22/2017
Volatile Organic Compounds								
71-43-2	Benzene	0.005	0.005	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
108-88-3	Toluene	0.56 to 1	0.56 to 1[M]	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0050)	ND (0.0050)
100-41-4	Ethylbenzene	0.7	0.7	mg/L	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
1330-20-7	Xylenes (Total)	1.4 to 10	1.4 to 10[M]	mg/L	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
Other Organic Compounds								
74-82-8	Methane	---	---	mg/L	ND (0.0066)	ND (0.0066)	ND (0.010)	ND (0.010)
74-84-0	Ethane	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
74-85-1	Ethene	---	---	mg/L	ND (0.0062)	ND (0.0062)	ND (0.013)	ND (0.013)
Inorganic Parameters								
7440-70-2	Calcium, Dissolved	---	---	mg/L	**82.7**	**82.2**	**98.6**	**97.1**
7439-89-6	Iron, Dissolved	---	0.3 to 5[M]	mg/L	ND (0.050)	ND (0.050)	ND (0.010)	ND (0.010)
7439-95-4	Magnesium, Dissolved	---	---	mg/L	**79.9**	**80.1**	**85.5**	**82.7**
7440-09-7	Potassium, Dissolved	---	---	mg/L	**1.9**	**1.81**	**1.9**	**1.99**
7440-23-5	Sodium, Dissolved	---	---	mg/L	**92.7**	**90.3**	**96.8**	**94.4**
7440-24-6	Strontium	---	---	mg/L	**3.6**	**2.65**	**4.38**	**3.11**
	Alkalinity, Carbonate (CaCO3)	---	---	mg/L	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
	Alkalinity, Bicarbonate (CaCO3)	---	---	mg/L	**536**	**424**	**396**	**409**
	Alkalinity, Total as CaCO3	---	---	mg/L	**536**	**424**	**396**	**409**
24959-67-9	Bromide	---	---	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
16887-00-6	Chloride	52.16[3]	250	mg/L	**38.6**	**33.4**	**48.4**	**49.2**
	Nitrogen as Nitrate	---	10	mg/L	**2.2**	**2.9**	NS	**2.8**
	Nitrogen as Nitrite	---	1	mg/L	ND (0.10)	ND (0.20)	NS	ND (0.10)
	Nitrogen as Nitrate and Nitrite	---	10	mg/L	**2.2**	**2.9**	NS	**2.8**
14808-79-8	Sulfate	832.4[3]	250	mg/L	**306**	**294**	**295**	**259**
18496-25-8	Sulfide, Total	---	---	mg/L	NS	NS	NS	NS
General Parameters								
	Specific Conductance	---	---	umhos/cm	**1,077**	**1,284**	**1,356**	**1,384**
	pH	---	6.5 - 8.5	Std. Units	**7.3**	**7.44**	**7.34**	**7.34**

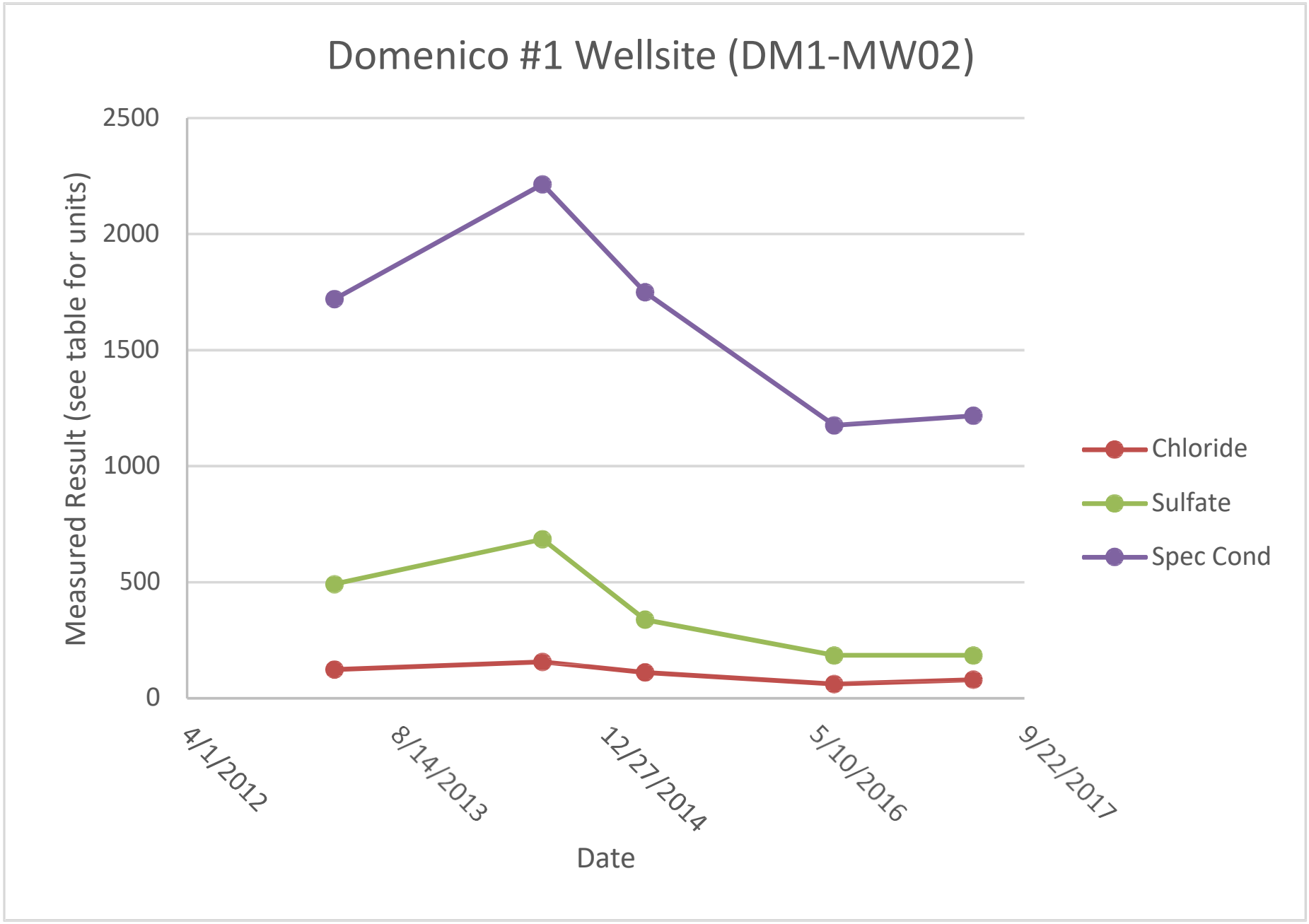

Powell #1 Wellhead (PL1-MW01)
Measured Result (see table for units)
3000.0
2500.0
2000.0
1500.0
1000.0
500.0
0.0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

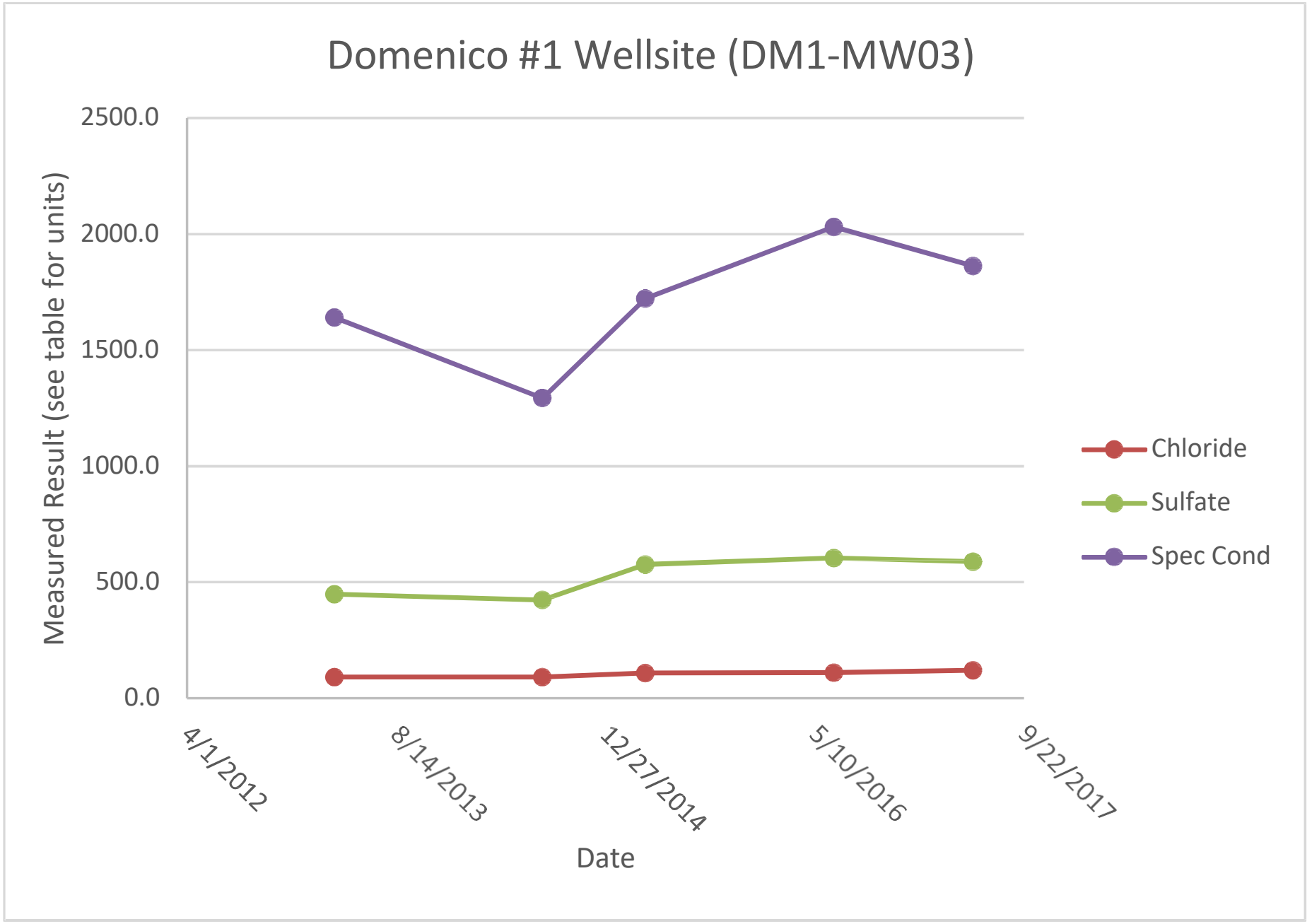

Powell #1 Wellhead (PL1-MW02)
Measured Result (see table for units)
2500.0
2000.0
1500.0
1000.0
500.0
0.0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

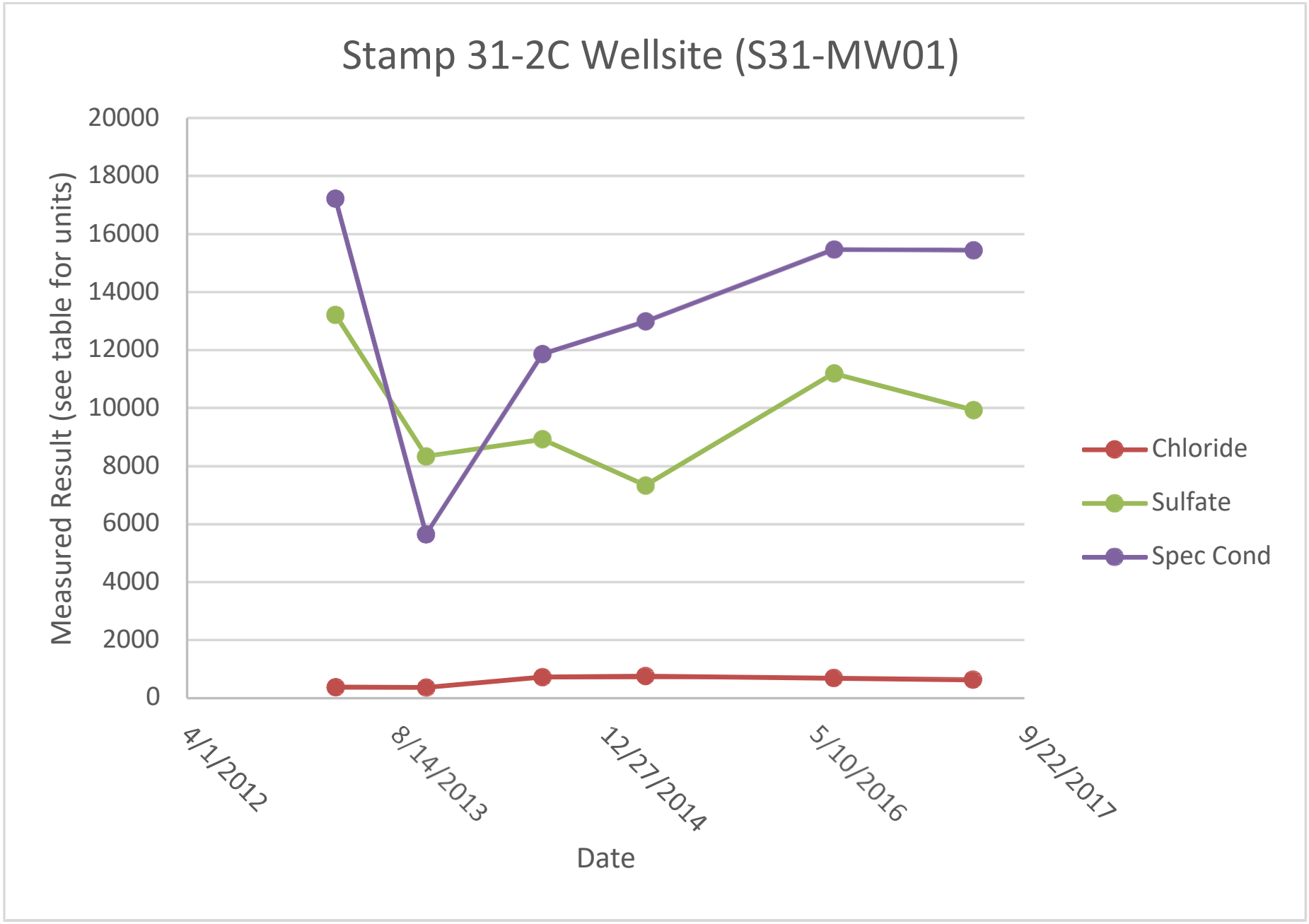

Evans #6 Tank Battery (E6T-MW01)
Measured Result (see table for units)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

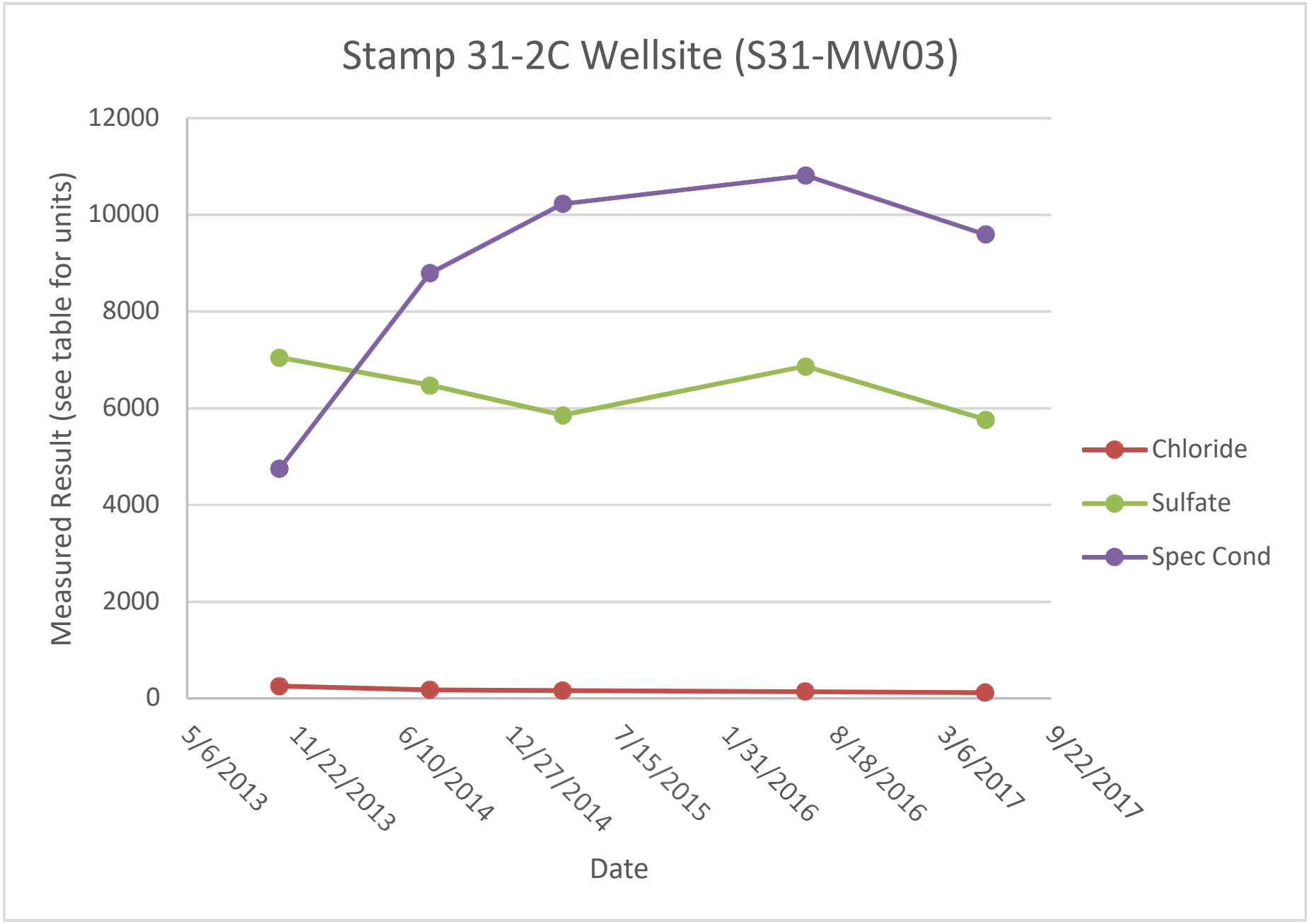

Evans #6 Tank Battery (E6T-MW03)
Measured Result (see table for units)
14000
12000
10000
8000
6000
4000
2000
0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

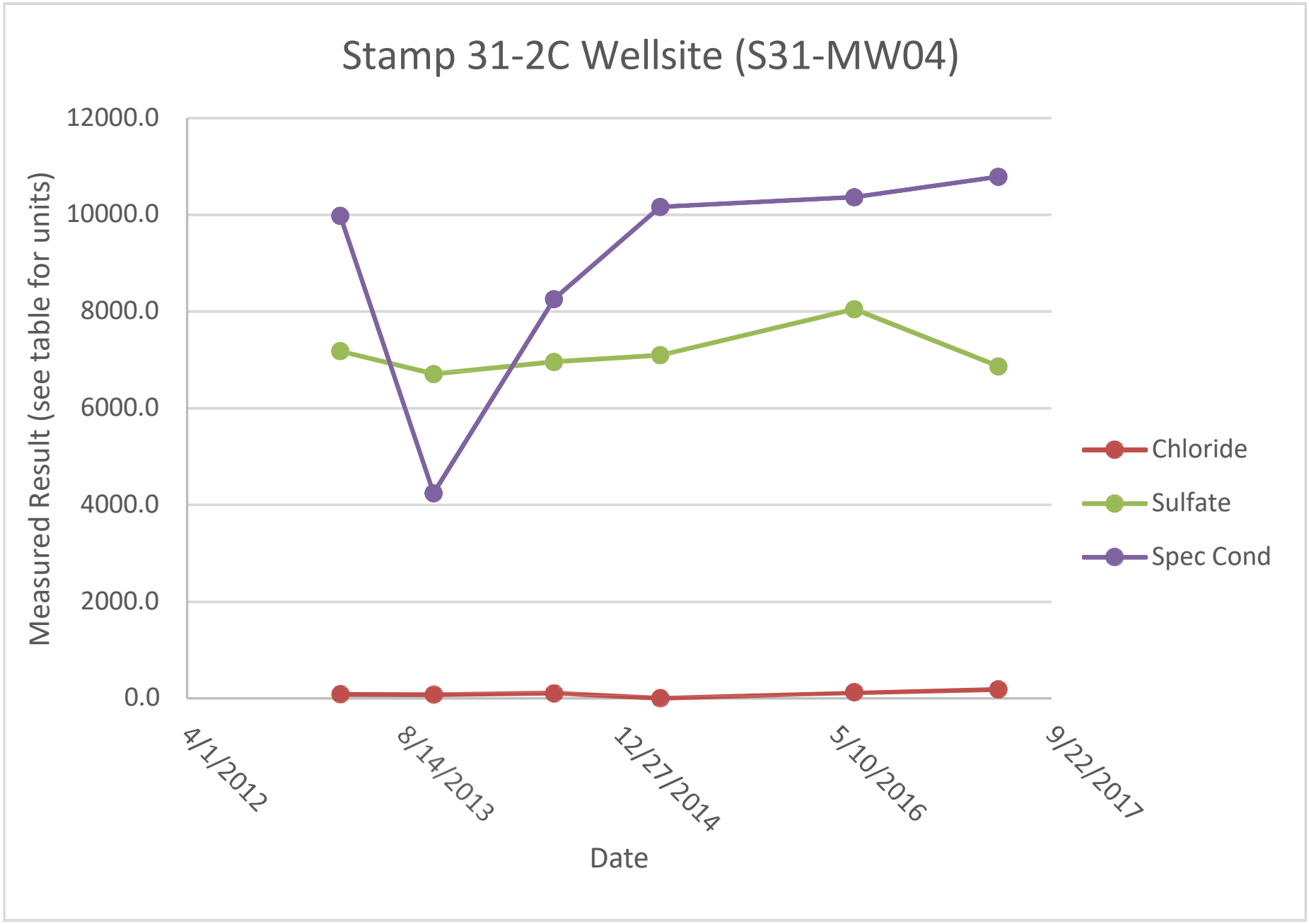

Domenico #1 Wellsite (DM1-MW01)
Measured Result (see table for units)
2500
2000
1500
1000
500
0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

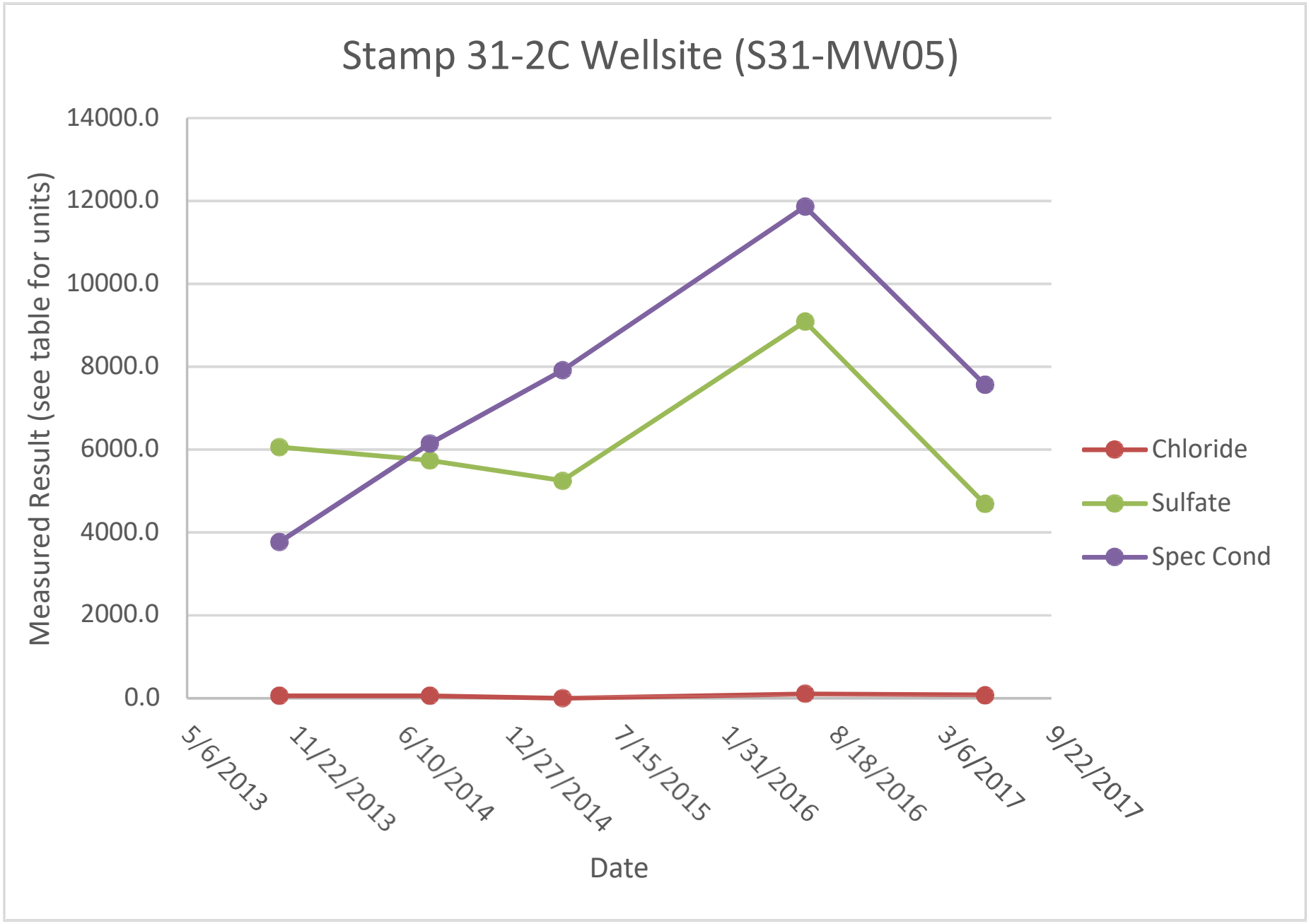

Domenico #1 Wellsite (DM1-MW02)
Measured Result (see table for units)
2500
2000
1500
1000
500
0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

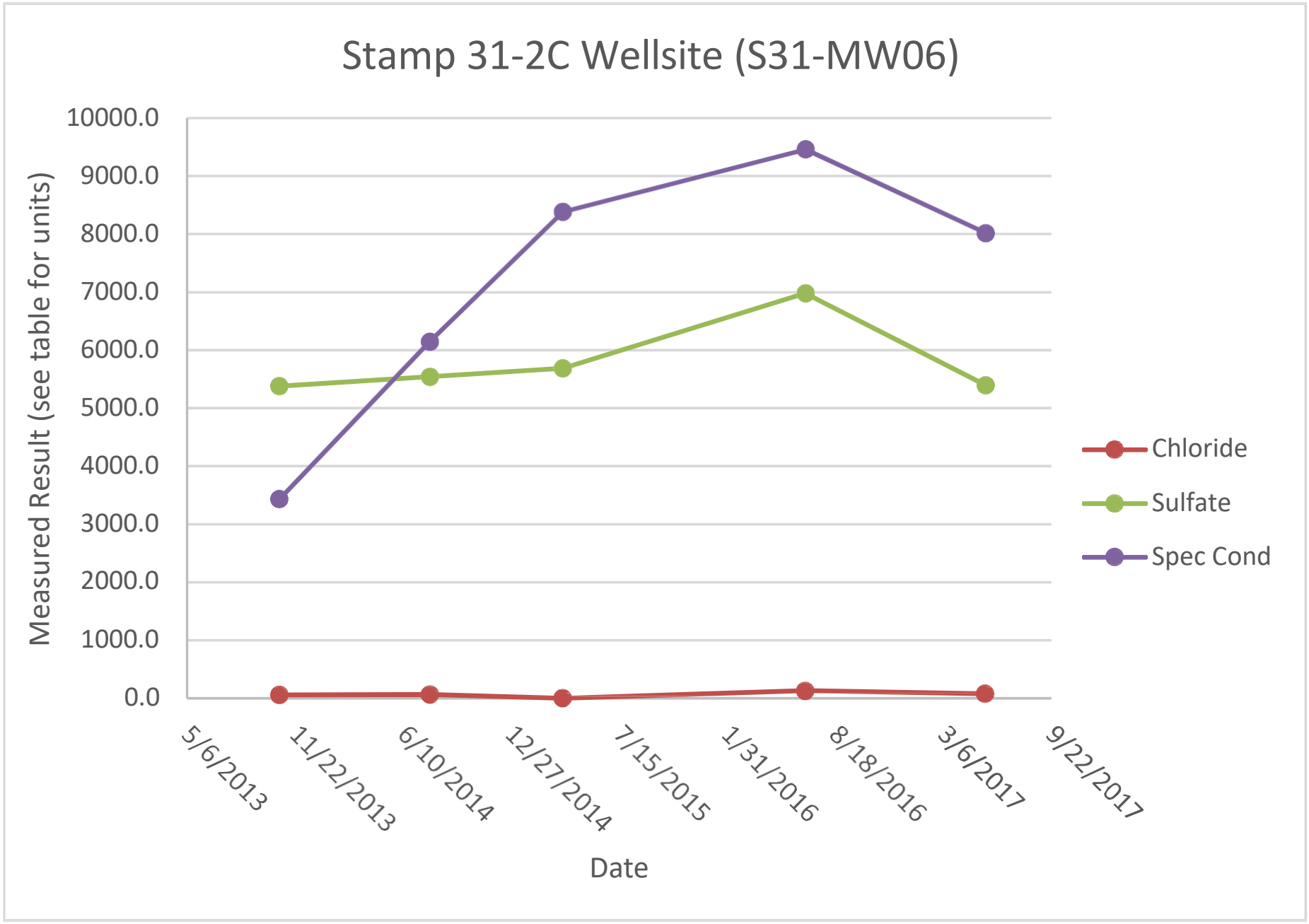

Domenico #1 Wellsite (DM1-MW03)
Measured Result (see table for units)
2500.0
2000.0
1500.0
1000.0
500.0
0.0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond


Stamp 31-2C Wellsite (S31-MW01)
Measured Result (see table for units)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

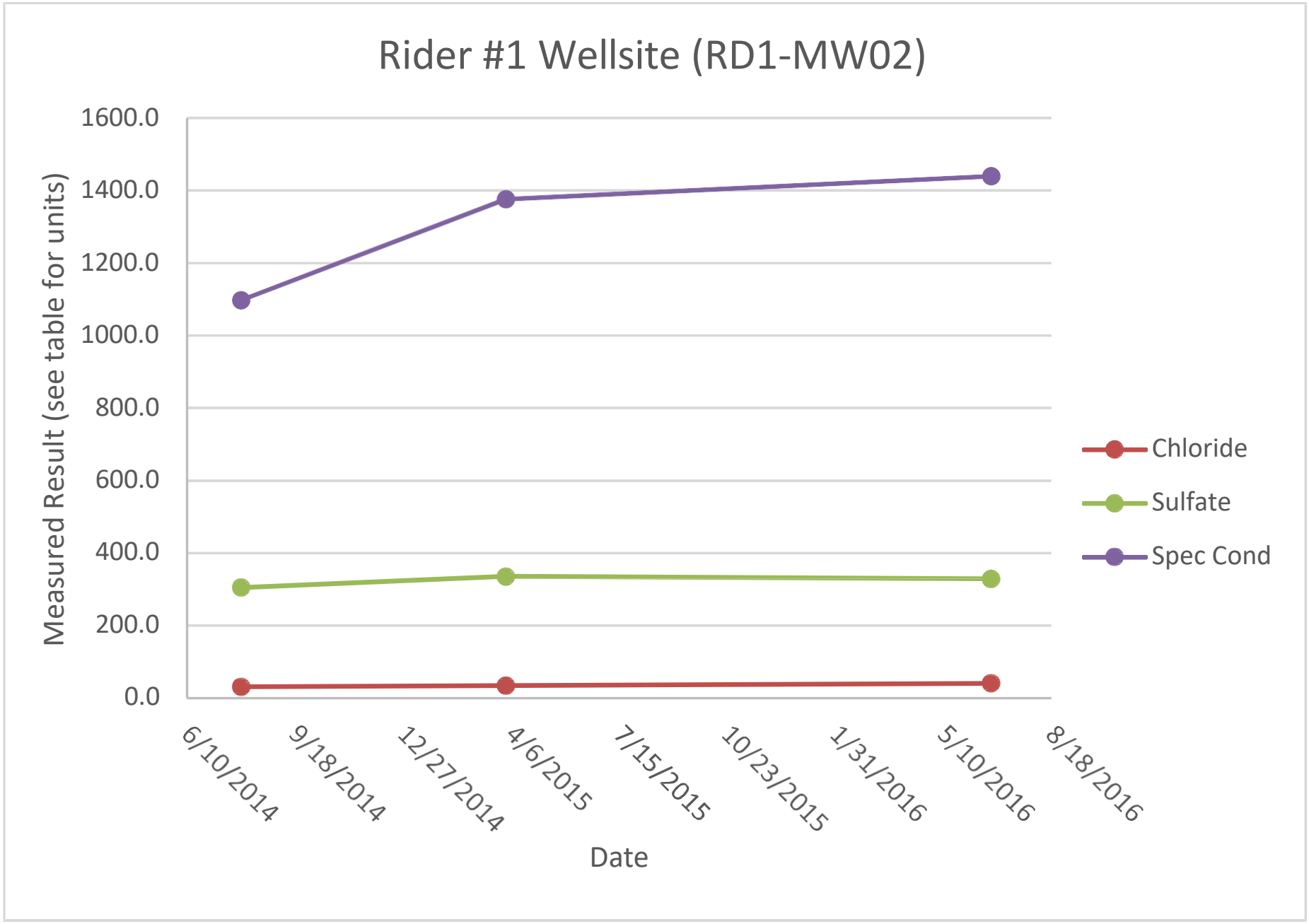

Stamp 31-2C Wellsite (S31-MW03)
Measured Result (see table for units)
12000
10000
8000
6000
4000
2000
0
5/6/2013
11/22/2013
6/10/2014
12/27/2014
7/15/2015
1/31/2016
8/18/2016
3/6/2017
9/22/2017
Date
Chloride
Sulfate
Spec Cond

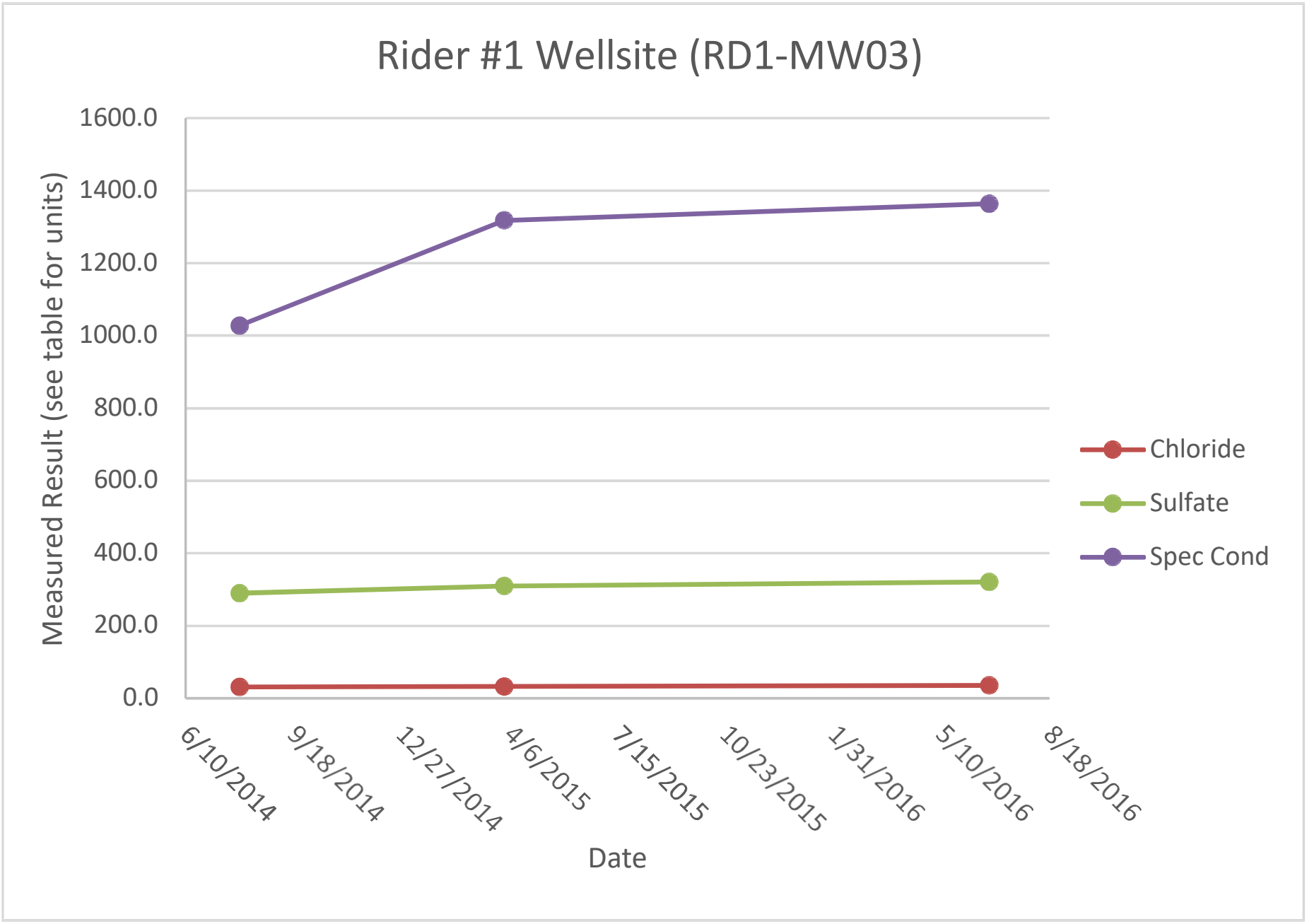

Stamp 31-2C Wellsite (S31-MW04)
Measured Result (see table for units)
12000.0
10000.0
8000.0
6000.0
4000.0
2000.0
0.0
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date
Chloride
Sulfate
Spec Cond

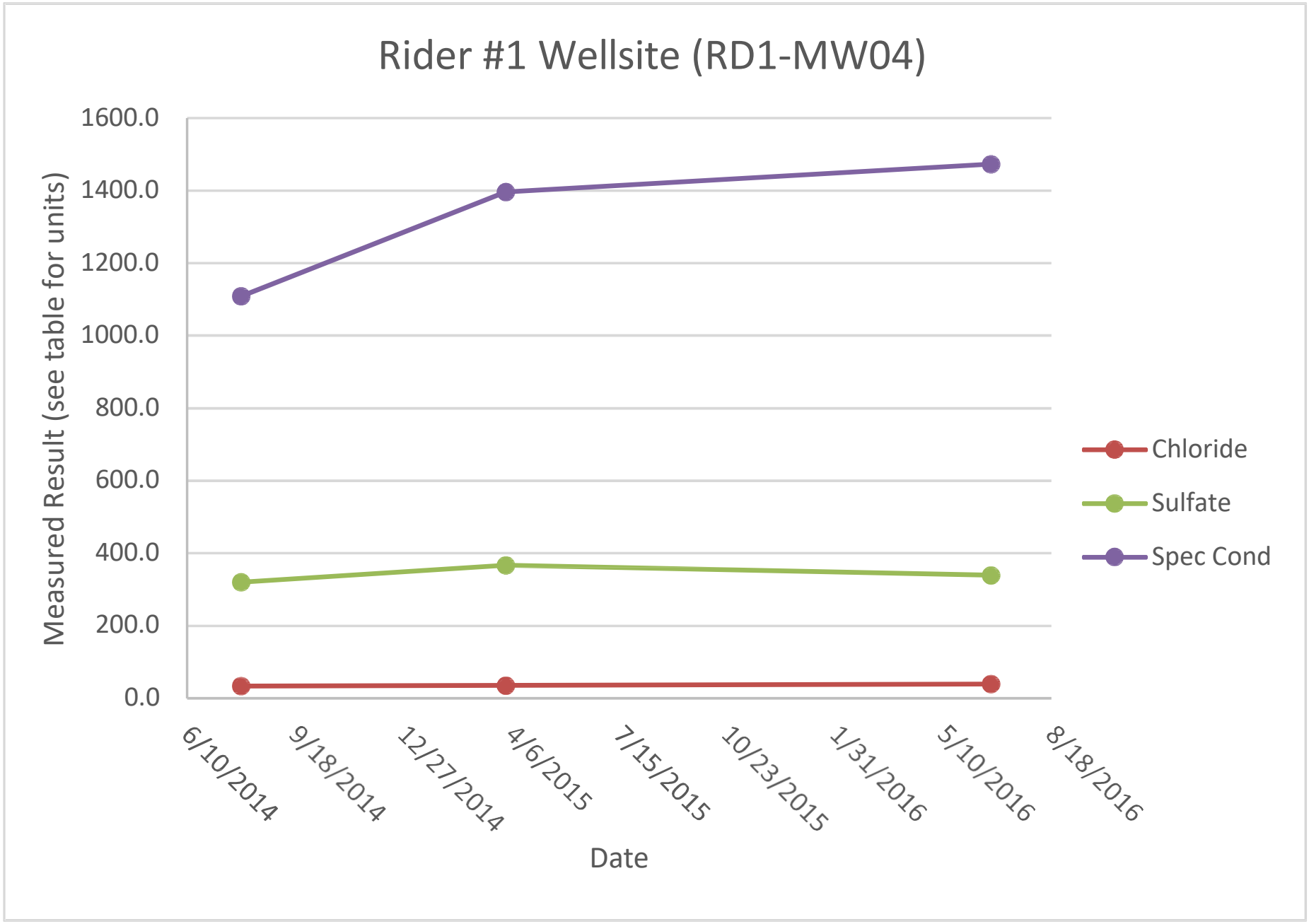

Stamp 31-2C Wellsite (S31-MW05)
Measured Result (see table for units)
14000.0
12000.0
10000.0
8000.0
6000.0
4000.0
2000.0
0.0
5/6/2013
11/22/2013
6/10/2014
12/27/2014
7/15/2015
1/31/2016
8/18/2016
3/6/2017
9/22/2017
Date
Chloride
Sulfate
Spec Cond

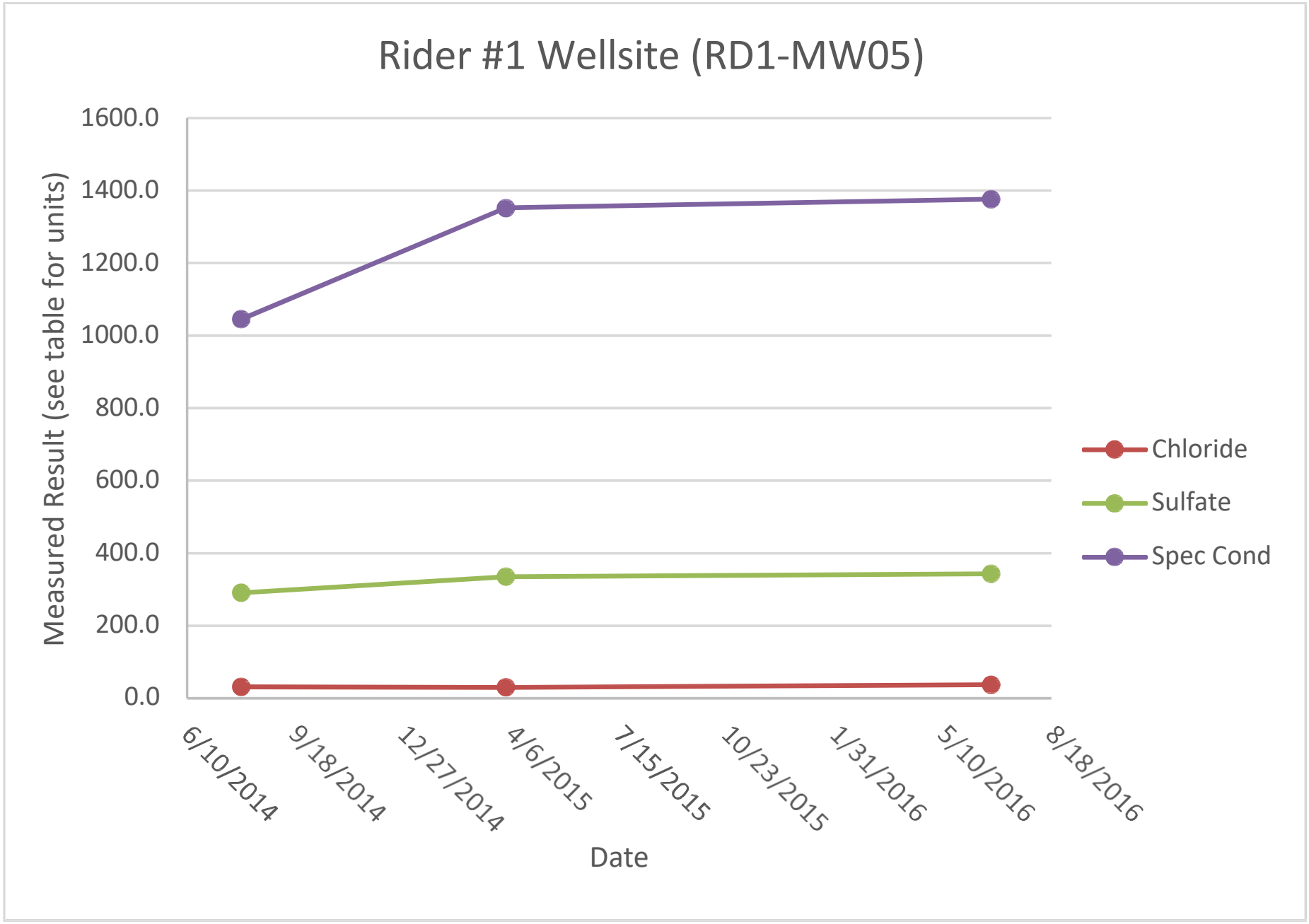

Stamp 31-2C Wellsite (S31-MW06)
Measured Result (see table for units)
10000.0
9000.0
8000.0
7000.0
6000.0
5000.0
4000.0
3000.0
2000.0
1000.0
0.0
5/6/2013
11/22/2013
6/10/2014
12/27/2014
7/15/2015
1/31/2016
8/18/2016
3/6/2017
9/22/2017
Date
Chloride
Sulfate
Spec Cond

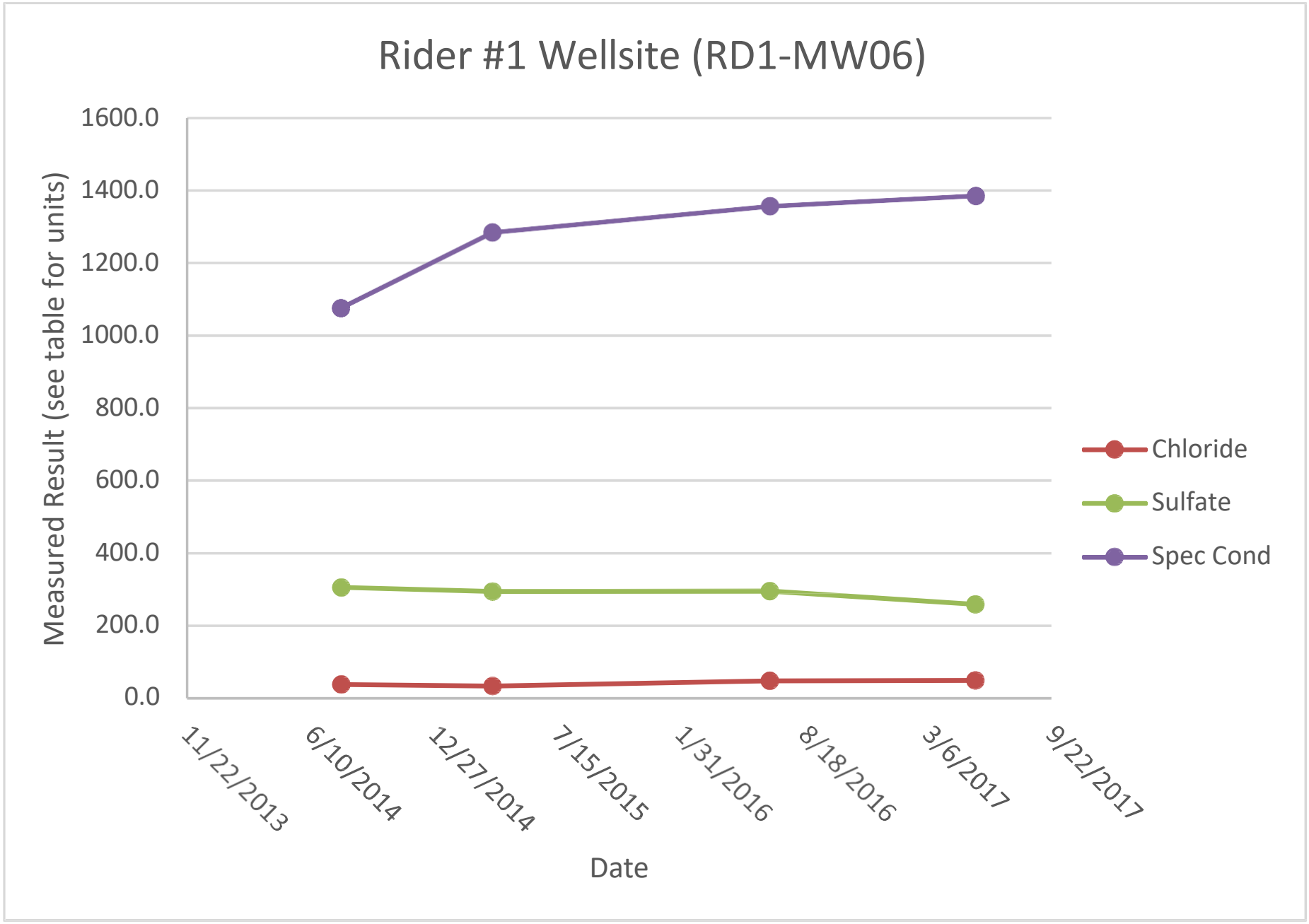

Rider #1 Wellsite (RD1-MW01)
Measured Result (see table for units)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
5/10/2016
8/18/2016
Date
Chloride
Sulfate
Spec Cond

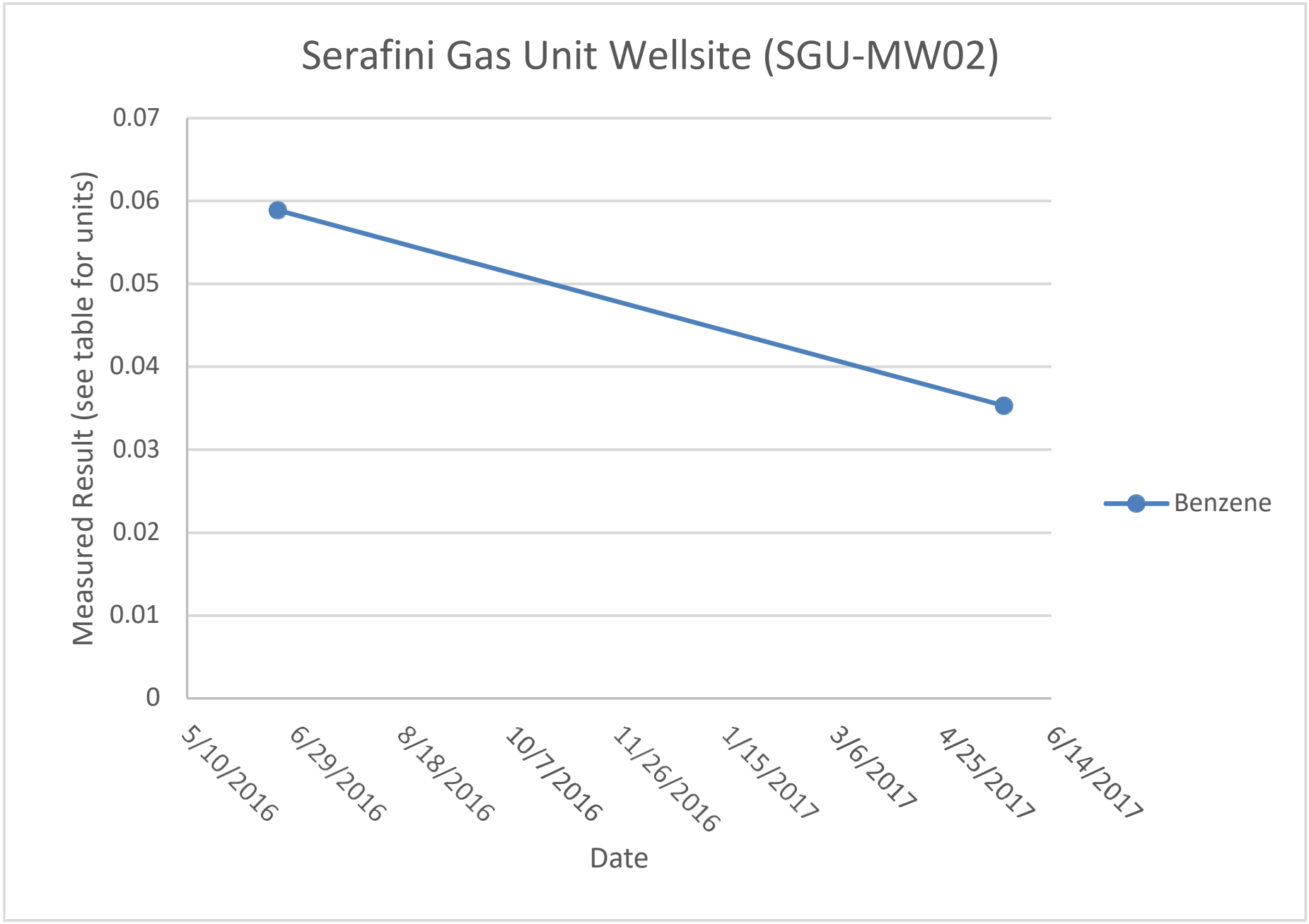

Rider #1 Wellsite (RD1-MW02)
Measured Result (see table for units)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
5/10/2016
8/18/2016
Date
Chloride
Sulfate
Spec Cond


Rider #1 Wellsite (RD1-MW03)
Measured Result (see table for units)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
5/10/2016
8/18/2016
Date
Chloride
Sulfate
Spec Cond


Rider #1 Wellsite (RD1-MW04)
Measured Result (see table for units)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
5/10/2016
8/18/2016
Date
Chloride
Sulfate
Spec Cond


Rider #1 Wellsite (RD1-MW05)
Measured Result (see table for units)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
5/10/2016
8/18/2016
Date
Chloride
Sulfate
Spec Cond


Rider #1 Wellsite (RD1-MW06)
Measured Result (see table for units)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
11/22/2013
6/10/2014
12/27/2014
7/15/2015
1/31/2016
8/18/2016
3/6/2017
9/22/2017
Date
Chloride
Sulfate
Spec Cond


Serafini Gas Unit Wellsite (SGU-MW02)
Measured Result (see table for units)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
5/10/2016
6/29/2016
8/18/2016
10/7/2016
11/26/2016
1/15/2017
3/6/2017
4/25/2017
6/14/2017
Date
Benzene

APPENDIX B
ANALYTICAL REPORT AND CHAIN OF CUSTODY
(In Electronic Copy Only)

ANALYTICAL REPORT

May 31, 2017

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L911143
Samples Received:	05/23/2017
Project Number:	22177002
Description:	City of Longmont COL

Report To:

Mike Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

RD1-MW01 L911143-01 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 10:05
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 13:26	05/25/17 13:26	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 15:34	05/24/17 15:34	KCF
Wet Chemistry by Method 300.0	WG982546	20	05/24/17 17:43	05/24/17 17:43	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 15:46	05/23/17 15:46	SAM
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:21	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:31	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG982934	1	05/25/17 13:35	05/25/17 13:35	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 16:00	05/28/17 16:00	JHH

RD1-MW02 L911143-02 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 10:25
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 13:34	05/25/17 13:34	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 15:44	05/24/17 15:44	KCF
Wet Chemistry by Method 300.0	WG982546	20	05/24/17 17:53	05/24/17 17:53	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 16:01	05/23/17 16:01	SAM
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:24	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:34	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG982934	1	05/25/17 13:38	05/25/17 13:38	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/30/17 21:53	05/30/17 21:53	LRL

RD1-MW04 L911143-03 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 10:45
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 13:41	05/25/17 13:41	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 15:54	05/24/17 15:54	KCF
Wet Chemistry by Method 300.0	WG982546	20	05/24/17 18:03	05/24/17 18:03	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 16:48	05/23/17 16:48	SAM
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:27	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:45	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG982934	1	05/25/17 13:40	05/25/17 13:40	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 16:30	05/28/17 16:30	JHH

RD1-MW05 L911143-04 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 11:00
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 13:48	05/25/17 13:48	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 16:04	05/24/17 16:04	KCF
Wet Chemistry by Method 300.0	WG982546	20	05/24/17 18:13	05/24/17 18:13	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 17:03	05/23/17 17:03	SAM
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:29	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:48	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG982934	1	05/25/17 13:42	05/25/17 13:42	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 16:45	05/28/17 16:45	JHH

RD1-MW06 L911143-05 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 11:30
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 14:31	05/25/17 14:31	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 16:14	05/24/17 16:14	KCF
Wet Chemistry by Method 300.0	WG982546	20	05/24/17 18:23	05/24/17 18:23	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 17:18	05/23/17 17:18	SAM
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:32	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:52	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG982934	1	05/25/17 13:50	05/25/17 13:50	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 17:00	05/28/17 17:00	JHH

S31-MW04 L911143-06 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 12:35
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 14:39	05/25/17 14:39	MCG
Wet Chemistry by Method 300.0	WG983299	100	05/27/17 16:22	05/27/17 16:22	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 17:34	05/23/17 17:34	SAM
Wet Chemistry by Method 9056A	WG982445	100	05/24/17 11:10	05/24/17 11:10	KCF
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:35	ST
Metals (ICP) by Method 6010B	WG983218	5	05/25/17 18:45	05/25/17 23:03	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:55	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG982934	1	05/25/17 13:52	05/25/17 13:52	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 17:15	05/28/17 17:15	JHH

S31-MW05 L911143-07 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 12:45
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 14:46	05/25/17 14:46	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 16:43	05/24/17 16:43	KCF
Wet Chemistry by Method 300.0	WG982546	50	05/24/17 16:53	05/24/17 16:53	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 17:49	05/23/17 17:49	SAM
Wet Chemistry by Method 9056A	WG982445	50	05/24/17 11:25	05/24/17 11:25	KCF
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:38	ST
Metals (ICP) by Method 6010B	WG983218	5	05/25/17 18:45	05/25/17 23:06	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 14:59	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:09	05/26/17 09:09	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 17:30	05/28/17 17:30	JHH

S31-MW06 L911143-08 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 13:00
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 14:53	05/25/17 14:53	MCG
Wet Chemistry by Method 300.0	WG982546	1	05/24/17 17:23	05/24/17 17:23	KCF
Wet Chemistry by Method 300.0	WG983299	100	05/27/17 16:37	05/27/17 16:37	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 18:20	05/23/17 18:20	SAM
Wet Chemistry by Method 9056A	WG982445	100	05/24/17 11:40	05/24/17 11:40	KCF
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:41	ST
Metals (ICP) by Method 6010B	WG983218	5	05/25/17 18:45	05/25/17 23:09	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 15:02	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:11	05/26/17 09:11	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 17:45	05/28/17 17:45	JHH

S31-MW03 L911143-09 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 13:15
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 14:59	05/25/17 14:59	MCG
Wet Chemistry by Method 300.0	WG982546	100	05/24/17 18:43	05/24/17 18:43	KCF
Wet Chemistry by Method 300.0	WG983299	5	05/27/17 16:52	05/27/17 16:52	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 18:36	05/23/17 18:36	SAM
Wet Chemistry by Method 9056A	WG982445	100	05/24/17 11:56	05/24/17 11:56	KCF
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:50	ST
Metals (ICP) by Method 6010B	WG983218	5	05/25/17 18:45	05/25/17 23:12	ST
Metals (ICPMS) by Method 6020	WG983437	1	05/26/17 10:57	05/26/17 15:06	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:13	05/26/17 09:13	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 18:00	05/28/17 18:00	JHH

S31-MW01 L911143-10 GW

Collected by: M. Skridulis
Collected date/time: 05/22/17 13:55
Received date/time: 05/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG982843	1	05/25/17 15:07	05/25/17 15:07	MCG
Wet Chemistry by Method 300.0	WG982546	100	05/24/17 19:32	05/24/17 19:32	KCF
Wet Chemistry by Method 300.0	WG983299	500	05/27/17 17:06	05/27/17 17:06	KCF
Wet Chemistry by Method 9056A	WG982396	1	05/23/17 19:53	05/23/17 19:53	SAM
Metals (ICP) by Method 6010B	WG983218	1	05/25/17 18:45	05/25/17 20:53	ST
Metals (ICP) by Method 6010B	WG983218	5	05/25/17 18:45	05/25/17 23:14	ST
Metals (ICPMS) by Method 6020	WG983437	5	05/26/17 10:57	05/26/17 15:23	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:16	05/26/17 09:16	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983889	1	05/28/17 18:15	05/28/17 18:15	JHH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	436		20.0	1	05/25/2017 13:26	WG982843

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		1.00	1	05/24/2017 15:34	WG982546
Chloride	37.8		1.00	1	05/24/2017 15:34	WG982546
Sulfate	326		100	20	05/24/2017 17:43	WG982546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	4.78		0.100	1	05/23/2017 15:46	WG982396
Nitrite as (N)	ND		0.100	1	05/23/2017 15:46	WG982396

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	102		1.00	1	05/25/2017 20:21	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:21	WG983218
Magnesium,Dissolved	78.5		1.00	1	05/25/2017 20:21	WG983218
Potassium,Dissolved	2.20		1.00	1	05/25/2017 20:21	WG983218
Sodium,Dissolved	122		1.00	1	05/25/2017 20:21	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	3.10		0.0100	1	05/26/2017 14:31	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	05/25/2017 13:35	WG982934
Ethane	ND		0.0130	1	05/25/2017 13:35	WG982934
Ethene	ND		0.0130	1	05/25/2017 13:35	WG982934

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 16:00	WG983889
Toluene	ND		0.00100	1	05/28/2017 16:00	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 16:00	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 16:00	WG983889
(S) Toluene-d8	*90.7*		*80.0-120*		*05/28/2017 16:00*	WG983889
(S) Dibromofluoromethane	*86.9*		*76.0-123*		*05/28/2017 16:00*	WG983889
(S) a,a,a-Trifluorotoluene	*92.2*		*80.0-120*		*05/28/2017 16:00*	WG983889
(S) 4-Bromofluorobenzene	*96.3*		*80.0-120*		*05/28/2017 16:00*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	416		20.0	1	05/25/2017 13:34	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/24/2017 15:44	WG982546
Chloride	38.4		1.00	1	05/24/2017 15:44	WG982546
Sulfate	281		100	20	05/24/2017 17:53	WG982546

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	4.12		0.100	1	05/23/2017 16:01	WG982396
Nitrite as (N)	ND		0.100	1	05/23/2017 16:01	WG982396

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	100		1.00	1	05/25/2017 20:24	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:24	WG983218
Magnesium,Dissolved	76.4		1.00	1	05/25/2017 20:24	WG983218
Potassium,Dissolved	2.23		1.00	1	05/25/2017 20:24	WG983218
Sodium,Dissolved	107		1.00	1	05/25/2017 20:24	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	3.04		0.0100	1	05/26/2017 14:34	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	0.176		0.0100	1	05/25/2017 13:38	WG982934
Ethane	ND		0.0130	1	05/25/2017 13:38	WG982934
Ethene	ND		0.0130	1	05/25/2017 13:38	WG982934

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/30/2017 21:53	WG983889
Toluene	ND		0.00100	1	05/30/2017 21:53	WG983889
Ethylbenzene	0.00525		0.00100	1	05/30/2017 21:53	WG983889
Total Xylenes	0.0480		0.00300	1	05/30/2017 21:53	WG983889
(S) Toluene-d8	*107*		*80.0-120*		*05/30/2017 21:53*	WG983889
(S) Dibromofluoromethane	*108*		*76.0-123*		*05/30/2017 21:53*	WG983889
(S) a,a,a-Trifluorotoluene	*98.9*		*80.0-120*		*05/30/2017 21:53*	WG983889
(S) 4-Bromofluorobenzene	*95.6*		*80.0-120*		*05/30/2017 21:53*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	419		20.0	1	05/25/2017 13:41	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/24/2017 15:54	WG982546
Chloride	38.7		1.00	1	05/24/2017 15:54	WG982546
Sulfate	277		100	20	05/24/2017 18:03	WG982546

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	3.62		0.100	1	05/23/2017 16:48	WG982396
Nitrite as (N)	ND		0.100	1	05/23/2017 16:48	WG982396

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	95.9		1.00	1	05/25/2017 20:27	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:27	WG983218
Magnesium,Dissolved	78.3		1.00	1	05/25/2017 20:27	WG983218
Potassium,Dissolved	1.93		1.00	1	05/25/2017 20:27	WG983218
Sodium,Dissolved	104		1.00	1	05/25/2017 20:27	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	2.99		0.0100	1	05/26/2017 14:45	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/25/2017 13:40	WG982934
Ethane	ND		0.0130	1	05/25/2017 13:40	WG982934
Ethene	ND		0.0130	1	05/25/2017 13:40	WG982934

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 16:30	WG983889
Toluene	ND		0.00100	1	05/28/2017 16:30	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 16:30	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 16:30	WG983889
(S) Toluene-d8	*90.8*		*80.0-120*		*05/28/2017 16:30*	WG983889
(S) Dibromofluoromethane	*83.5*		*76.0-123*		*05/28/2017 16:30*	WG983889
(S) a,a,a-Trifluorotoluene	*93.3*		*80.0-120*		*05/28/2017 16:30*	WG983889
(S) 4-Bromofluorobenzene	*95.8*		*80.0-120*		*05/28/2017 16:30*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	409		20.0	1	05/25/2017 13:48	WG982843

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		1.00	1	05/24/2017 16:04	WG982546
Chloride	37.5		1.00	1	05/24/2017 16:04	WG982546
Sulfate	278		100	20	05/24/2017 18:13	WG982546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	3.73		0.100	1	05/23/2017 17:03	WG982396
Nitrite as (N)	ND		0.100	1	05/23/2017 17:03	WG982396

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	96.8		1.00	1	05/25/2017 20:29	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:29	WG983218
Magnesium,Dissolved	76.8		1.00	1	05/25/2017 20:29	WG983218
Potassium,Dissolved	2.38		1.00	1	05/25/2017 20:29	WG983218
Sodium,Dissolved	103		1.00	1	05/25/2017 20:29	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	3.66		0.0100	1	05/26/2017 14:48	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	0.0449		0.0100	1	05/25/2017 13:42	WG982934
Ethane	ND		0.0130	1	05/25/2017 13:42	WG982934
Ethene	ND		0.0130	1	05/25/2017 13:42	WG982934

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 16:45	WG983889
Toluene	ND		0.00100	1	05/28/2017 16:45	WG983889
Ethylbenzene	0.00112		0.00100	1	05/28/2017 16:45	WG983889
Total Xylenes	0.00812		0.00300	1	05/28/2017 16:45	WG983889
(S) Toluene-d8	*91.0*		*80.0-120*		*05/28/2017 16:45*	WG983889
(S) Dibromofluoromethane	*85.8*		*76.0-123*		*05/28/2017 16:45*	WG983889
(S) a,a,a-Trifluorotoluene	*91.8*		*80.0-120*		*05/28/2017 16:45*	WG983889
(S) 4-Bromofluorobenzene	*98.6*		*80.0-120*		*05/28/2017 16:45*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	409		20.0	1	05/25/2017 14:31	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/24/2017 16:14	WG982546
Chloride	49.2		1.00	1	05/24/2017 16:14	WG982546
Sulfate	259		100	20	05/24/2017 18:23	WG982546

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	2.80		0.100	1	05/23/2017 17:18	WG982396
Nitrite as (N)	ND		0.100	1	05/23/2017 17:18	WG982396

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	97.1		1.00	1	05/25/2017 20:32	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:32	WG983218
Magnesium,Dissolved	82.7		1.00	1	05/25/2017 20:32	WG983218
Potassium,Dissolved	1.99		1.00	1	05/25/2017 20:32	WG983218
Sodium,Dissolved	94.4		1.00	1	05/25/2017 20:32	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	3.11		0.0100	1	05/26/2017 14:52	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/25/2017 13:50	WG982934
Ethane	ND		0.0130	1	05/25/2017 13:50	WG982934
Ethene	ND		0.0130	1	05/25/2017 13:50	WG982934

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 17:00	WG983889
Toluene	ND		0.00100	1	05/28/2017 17:00	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 17:00	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 17:00	WG983889
(S) Toluene-d8	*89.5*		*80.0-120*		*05/28/2017 17:00*	WG983889
(S) Dibromofluoromethane	*84.8*		*76.0-123*		*05/28/2017 17:00*	WG983889
(S) a,a,a-Trifluorotoluene	*92.3*		*80.0-120*		*05/28/2017 17:00*	WG983889
(S) 4-Bromofluorobenzene	*96.2*		*80.0-120*		*05/28/2017 17:00*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	554		20.0	1	05/25/2017 14:39	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		100	100	05/27/2017 16:22	WG983299
Chloride	185		100	100	05/27/2017 16:22	WG983299
Sulfate	6870		500	100	05/27/2017 16:22	WG983299

Sample Narrative:

300.0 L911143-06 WG983299: Reporting bromide BDL @ 100x due to sulfate peak interference @ 1x

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		10.0	100	05/24/2017 11:10	WG982445
Nitrite as (N)	ND		0.100	1	05/23/2017 17:34	WG982396

Sample Narrative:

9056A L911143-06 WG982445: Reporting nitrate BDL @ 100x due to sulfate interference

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	410		1.00	1	05/25/2017 20:35	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:35	WG983218
Magnesium,Dissolved	765		1.00	1	05/25/2017 20:35	WG983218
Potassium,Dissolved	10.3		1.00	1	05/25/2017 20:35	WG983218
Sodium,Dissolved	1560		5.00	5	05/25/2017 23:03	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	8.45		0.0100	1	05/26/2017 14:55	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/25/2017 13:52	WG982934
Ethane	ND		0.0130	1	05/25/2017 13:52	WG982934
Ethene	ND		0.0130	1	05/25/2017 13:52	WG982934

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 17:15	WG983889
Toluene	ND		0.00100	1	05/28/2017 17:15	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 17:15	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 17:15	WG983889
(S) Toluene-d8	*89.9*		*80.0-120*		*05/28/2017 17:15*	WG983889
(S) Dibromofluoromethane	*84.7*		*76.0-123*		*05/28/2017 17:15*	WG983889
(S) a,a,a-Trifluorotoluene	*91.6*		*80.0-120*		*05/28/2017 17:15*	WG983889
(S) 4-Bromofluorobenzene	*92.6*		*80.0-120*		*05/28/2017 17:15*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	523		20.0	1	05/25/2017 14:46	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		50.0	50	05/24/2017 16:53	WG982546
Chloride	76.5		1.00	1	05/24/2017 16:43	WG982546
Sulfate	4690		250	50	05/24/2017 16:53	WG982546

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		5.00	50	05/24/2017 11:25	WG982445
Nitrite as (N)	ND		0.100	1	05/23/2017 17:49	WG982396

Sample Narrative:

9056A L911143-07 WG982445: Reporting nitrate BDL @ 50x due to sulfate interference

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	411		1.00	1	05/25/2017 20:38	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:38	WG983218
Magnesium,Dissolved	548		1.00	1	05/25/2017 20:38	WG983218
Potassium,Dissolved	9.09		1.00	1	05/25/2017 20:38	WG983218
Sodium,Dissolved	996		5.00	5	05/25/2017 23:06	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	6.93		0.0100	1	05/26/2017 14:59	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 09:09	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:09	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:09	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 17:30	WG983889
Toluene	ND		0.00100	1	05/28/2017 17:30	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 17:30	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 17:30	WG983889
(S) Toluene-d8	*91.1*		*80.0-120*		*05/28/2017 17:30*	WG983889
(S) Dibromofluoromethane	*84.1*		*76.0-123*		*05/28/2017 17:30*	WG983889
(S) a,a,a-Trifluorotoluene	*92.9*		*80.0-120*		*05/28/2017 17:30*	WG983889
(S) 4-Bromofluorobenzene	*96.2*		*80.0-120*		*05/28/2017 17:30*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	531		20.0	1	05/25/2017 14:53	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		100	100	05/27/2017 16:37	WG983299
Chloride	81.4		1.00	1	05/24/2017 17:23	WG982546
Sulfate	5400		500	100	05/27/2017 16:37	WG983299

Sample Narrative:

300.0 L911143-08 WG983299: Reporting bromide BDL @ 100x due to sulfate peak interference @ 1x

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		10.0	100	05/24/2017 11:40	WG982445
Nitrite as (N)	ND		0.100	1	05/23/2017 18:20	WG982396

Sample Narrative:

9056A L911143-08 WG982445: Reporting nitrate BDL @ 100x due to sulfate interference

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	421		1.00	1	05/25/2017 20:41	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:41	WG983218
Magnesium,Dissolved	589		1.00	1	05/25/2017 20:41	WG983218
Potassium,Dissolved	9.49		1.00	1	05/25/2017 20:41	WG983218
Sodium,Dissolved	1150		5.00	5	05/25/2017 23:09	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	8.20		0.0100	1	05/26/2017 15:02	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 09:11	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:11	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:11	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 17:45	WG983889
Toluene	ND		0.00100	1	05/28/2017 17:45	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 17:45	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 17:45	WG983889
(S) Toluene-d8	*90.4*		*80.0-120*		*05/28/2017 17:45*	WG983889
(S) Dibromofluoromethane	*84.8*		*76.0-123*		*05/28/2017 17:45*	WG983889
(S) a,a,a-Trifluorotoluene	*92.6*		*80.0-120*		*05/28/2017 17:45*	WG983889
(S) 4-Bromofluorobenzene	*94.4*		*80.0-120*		*05/28/2017 17:45*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	1280		20.0	1	05/25/2017 14:59	WG982843

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		100	100	05/24/2017 18:43	WG982546
Chloride	118		5.00	5	05/27/2017 16:52	WG983299
Sulfate	5770		500	100	05/24/2017 18:43	WG982546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	ND		10.0	100	05/24/2017 11:56	WG982445
Nitrite as (N)	ND		0.100	1	05/23/2017 18:36	WG982396

Sample Narrative:

9056A L911143-09 WG982445: Reporting nitrate BDL @ 100x due to sulfate interference

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	438		1.00	1	05/25/2017 20:50	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:50	WG983218
Magnesium,Dissolved	743		1.00	1	05/25/2017 20:50	WG983218
Potassium,Dissolved	8.65		1.00	1	05/25/2017 20:50	WG983218
Sodium,Dissolved	1510		5.00	5	05/25/2017 23:12	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	9.34		0.0100	1	05/26/2017 15:06	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	0.319		0.0100	1	05/26/2017 09:13	WG983342
Ethane	0.0190		0.0130	1	05/26/2017 09:13	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:13	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 18:00	WG983889
Toluene	ND		0.00100	1	05/28/2017 18:00	WG983889
Ethylbenzene	ND		0.00100	1	05/28/2017 18:00	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 18:00	WG983889
(S) Toluene-d8	*91.2*		*80.0-120*		*05/28/2017 18:00*	WG983889
(S) Dibromofluoromethane	*85.5*		*76.0-123*		*05/28/2017 18:00*	WG983889
(S) a,a,a-Trifluorotoluene	*91.9*		*80.0-120*		*05/28/2017 18:00*	WG983889
(S) 4-Bromofluorobenzene	*103*		*80.0-120*		*05/28/2017 18:00*	WG983889

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	753		20.0	1	05/25/2017 15:07	WG982843

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		500	500	05/27/2017 17:06	WG983299
Chloride	637		100	100	05/24/2017 19:32	WG982546
Sulfate	9930		2500	500	05/27/2017 17:06	WG983299

Sample Narrative:

300.0 L911143-10 WG983299: Reporting bromide BDL @ 500x due to sulfate peak interference @ 1x

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		0.100	1	05/23/2017 19:53	WG982396
Nitrite as (N)	ND		0.100	1	05/23/2017 19:53	WG982396

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	416		1.00	1	05/25/2017 20:53	WG983218
Iron,Dissolved	ND		0.100	1	05/25/2017 20:53	WG983218
Magnesium,Dissolved	1200		5.00	5	05/25/2017 23:14	WG983218
Potassium,Dissolved	13.3		1.00	1	05/25/2017 20:53	WG983218
Sodium,Dissolved	2880		5.00	5	05/25/2017 23:14	WG983218

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	10.0		0.0500	5	05/26/2017 15:23	WG983437

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	0.318		0.0100	1	05/26/2017 09:16	WG983342
Ethane	0.0145		0.0130	1	05/26/2017 09:16	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:16	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 18:15	WG983889
Toluene	ND		0.00100	1	05/28/2017 18:15	WG983889
Ethylbenzene	0.00648		0.00100	1	05/28/2017 18:15	WG983889
Total Xylenes	ND		0.00300	1	05/28/2017 18:15	WG983889
(S) Toluene-d8	*91.1*		*80.0-120*		*05/28/2017 18:15*	WG983889
(S) Dibromofluoromethane	*84.5*		*76.0-123*		*05/28/2017 18:15*	WG983889
(S) a,a,a-Trifluorotoluene	*92.6*		*80.0-120*		*05/28/2017 18:15*	WG983889
(S) 4-Bromofluorobenzene	*96.4*		*80.0-120*		*05/28/2017 18:15*	WG983889

Method Blank (MB)

(MB) R3221177-2 05/25/17 12:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	3.97	J	2.71	20.0

L911196-05 Original Sample (OS) • Duplicate (DUP)

(OS) L911196-05 05/25/17 12:50 • (DUP) R3221177-3 05/25/17 12:56

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	ND	ND	1	0.000		20

L911196-09 Original Sample (OS) • Duplicate (DUP)

(OS) L911196-09 05/25/17 17:01 • (DUP) R3221177-6 05/25/17 17:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	48.6	48.4	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221177-4 05/25/17 13:54 • (LCSD) R3221177-5 05/25/17 15:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	112	105	112	105	85.0-115			6.00	20

Method Blank (MB)

(MB) R3220914-2 05/24/17 10:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.079	1.00
Chloride	U		0.0519	1.00
Sulfate	U		0.0774	5.00

L911128-06 Original Sample (OS) • Duplicate (DUP)

(OS) L911128-06 05/24/17 13:44 • (DUP) R3220914-6 05/24/17 13:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	0.000	20	0		20
Chloride	673	680	20	1		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3220914-3 05/24/17 10:50 • (LCSD) R3220914-4 05/24/17 11:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Bromide	40.0	40.9	40.9	102	102	90-110			0	20
Chloride	40.0	40.5	40.4	101	101	90-110			0	20
Sulfate	40.0	40.7	40.8	102	102	90-110			0	20

L910777-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L910777-01 05/24/17 13:24 • (MS) R3220914-5 05/24/17 13:34

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Bromide	50.0	7.70	56.6	98	1	80-120	
Sulfate	50.0	60.1	109	98	1	80-120	E

L910777-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L910777-08 05/24/17 20:32 • (MS) R3220914-7 05/24/17 20:42 • (MSD) R3220914-8 05/24/17 20:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	ND	49.7	46.5	99	92	1	80-120			7	20
Chloride	50.0	7.67	58.6	59.5	102	104	1	80-120			2	20

Method Blank (MB)

(MB) R3221704-1 05/27/17 09:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.079	1.00
Chloride	0.0835	J	0.0519	1.00
Sulfate	U		0.0774	5.00

L911543-05 Original Sample (OS) • Duplicate (DUP)

(OS) L911543-05 05/27/17 18:05 • (DUP) R3221704-4 05/27/17 18:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	43.3	43.0	1	1		20
Sulfate	2.54	2.46	1	3	J	20

L911551-05 Original Sample (OS) • Duplicate (DUP)

(OS) L911551-05 05/27/17 20:46 • (DUP) R3221704-6 05/27/17 21:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	54.7	54.4	1	1		20
Sulfate	6.94	6.90	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221704-2 05/27/17 09:26 • (LCSD) R3221704-3 05/27/17 09:41

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Bromide	40.0	40.1	40.1	100	100	90-110			0	20
Chloride	40.0	39.6	39.7	99	99	90-110			0	20
Sulfate	40.0	40.2	40.2	100	100	90-110			0	20

L911551-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L911551-01 05/27/17 19:33 • (MS) R3221704-5 05/27/17 19:48

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Chloride	50.0	85.4	132	94	1	80-120	E
Sulfate	50.0	9.15	58.8	99	1	80-120	

L911551-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911551-11 05/27/17 22:14 • (MS) R3221704-7 05/27/17 22:29 • (MSD) R3221704-8 05/27/17 22:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	0.392	49.3	49.7	98	99	1	80-120			1	20
Chloride	50.0	69.4	119	119	99	98	1	80-120	E	E	0	20
Sulfate	50.0	U	50.7	50.8	101	102	1	80-120			0	20

Method Blank (MB)

(MB) R3220574-1 05/23/17 07:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100

L911131-01 Original Sample (OS) • Duplicate (DUP)

(OS) L911131-01 05/23/17 13:58 • (DUP) R3220574-4 05/23/17 14:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Nitrate	1.01	1.00	1	0		15
Nitrite	ND	0.000	1	0		15

L911143-07 Original Sample (OS) • Duplicate (DUP)

(OS) L911143-07 05/23/17 17:49 • (DUP) R3220574-6 05/23/17 18:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Nitrate	ND	0.000	1	0		15
Nitrite	ND	0.000	1	0		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3220574-2 05/23/17 07:25 • (LCSD) R3220574-3 05/23/17 07:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Nitrate	8.00	8.21	8.21	103	103	80-120			0	15
Nitrite	8.00	8.07	8.08	101	101	80-120			0	15

L911134-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L911134-01 05/23/17 14:29 • (MS) R3220574-5 05/23/17 14:44

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Nitrate	5.00	ND	4.80	96	1	80-120	
Nitrite	5.00	ND	5.12	102	1	80-120	

L911143-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911143-09 05/23/17 18:36 • (MS) R3220574-7 05/23/17 18:51 • (MSD) R3220574-8 05/23/17 19:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate	5.00	ND	4.73	4.80	95	96	1	80-120			1	15
Nitrite	5.00	ND	5.22	5.26	104	105	1	80-120			1	15

Method Blank (MB)

(MB) R3220926-1 05/24/17 05:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Nitrate	U		0.0227	0.100

L911201-02 Original Sample (OS) • Duplicate (DUP)

(OS) L911201-02 05/24/17 09:06 • (DUP) R3220926-4 05/24/17 10:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Nitrate	0.0658	0.0652	1	1	J	15

L911329-01 Original Sample (OS) • Duplicate (DUP)

(OS) L911329-01 05/24/17 13:42 • (DUP) R3220926-6 05/24/17 13:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Nitrate	1.20	1.22	1	2		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3220926-2 05/24/17 05:56 • (LCSD) R3220926-3 05/24/17 06:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Nitrate	8.00	8.19	8.20	102	102	80-120			0	15

L911201-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L911201-07 05/24/17 09:37 • (MS) R3220926-5 05/24/17 10:54

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Nitrate	5.00	0.127	5.20	102	1	80-120	

Method Blank (MB)

(MB) R3221122-1 05/25/17 19:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium,Dissolved	0.0497	J	0.0463	1.00
Iron,Dissolved	U		0.0141	0.100
Magnesium,Dissolved	0.0188	J	0.0111	1.00
Potassium,Dissolved	U		0.102	1.00
Sodium,Dissolved	U		0.0985	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221122-2 05/25/17 19:47 • (LCSD) R3221122-3 05/25/17 19:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	10.0	9.11	9.06	91	91	80-120			1	20
Iron,Dissolved	10.0	9.96	9.88	100	99	80-120			1	20
Magnesium,Dissolved	10.0	9.50	9.48	95	95	80-120			0	20
Potassium,Dissolved	10.0	10.2	10.1	102	101	80-120			1	20
Sodium,Dissolved	10.0	8.99	8.94	90	89	80-120			1	20

L910979-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L910979-01 05/25/17 19:52 • (MS) R3221122-5 05/25/17 19:57 • (MSD) R3221122-6 05/25/17 20:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	10.0	88.8	96.3	96.8	75	80	1	75-125			1	20
Iron,Dissolved	10.0	ND	9.82	9.88	98	99	1	75-125			1	20
Magnesium,Dissolved	10.0	31.3	39.8	40.0	85	87	1	75-125			1	20
Potassium,Dissolved	10.0	1.07	11.2	11.3	101	102	1	75-125			1	20
Sodium,Dissolved	10.0	91.6	98.7	99.7	70	81	1	75-125	V		1	20

Method Blank (MB)

(MB) R3221319-1 05/26/17 14:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Strontium	0.000798	J	0.00016	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221319-2 05/26/17 14:10 • (LCSD) R3221319-3 05/26/17 14:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Strontium	0.0500	0.0534	0.0526	107	105	80-120			1	20

L911503-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911503-01 05/26/17 14:17 • (MS) R3221319-5 05/26/17 14:24 • (MSD) R3221319-6 05/26/17 14:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Strontium	0.0500	0.150	0.205	0.204	110	106	1	75-125			1	20

Method Blank (MB)

(MB) R3220972-1 05/25/17 12:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L910928-01 Original Sample (OS) • Duplicate (DUP)

(OS) L910928-01 05/25/17 13:02 • (DUP) R3220972-2 05/25/17 13:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	0.564	0.577	1	2.30		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L910928-05 Original Sample (OS) • Duplicate (DUP)

(OS) L910928-05 05/25/17 13:27 • (DUP) R3220972-3 05/25/17 13:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	0.833	0.824	1	1.09		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3220972-4 05/25/17 13:58 • (LCSD) R3220972-5 05/25/17 14:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Methane	0.0678	0.0734	0.0688	108	102	85.0-115			6.43	20
Ethane	0.129	0.125	0.125	97.3	97.1	85.0-115			0.130	20
Ethene	0.127	0.122	0.122	96.2	95.9	85.0-115			0.310	20

Method Blank (MB)

(MB) R3221203-1 05/26/17 08:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L911143-07 Original Sample (OS) • Duplicate (DUP)

(OS) L911143-07 05/26/17 09:09 • (DUP) R3221203-2 05/26/17 09:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L911346-05 Original Sample (OS) • Duplicate (DUP)

(OS) L911346-05 05/26/17 09:58 • (DUP) R3221203-3 05/26/17 10:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221203-4 05/26/17 10:32 • (LCSD) R3221203-5 05/26/17 10:34

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Methane	0.0678	0.0704	0.0738	104	109	85.0-115			4.81	20
Ethane	0.129	0.120	0.128	93.0	99.1	85.0-115			6.32	20
Ethene	0.127	0.117	0.124	92.0	97.5	85.0-115			5.78	20

Method Blank (MB)

(MB) R3221838-3 05/28/17 12:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*90.1*			*80.0-120*
(S) Dibromofluoromethane	*85.1*			*76.0-123*
(S) a,a,a-Trifluorotoluene	*90.0*			*80.0-120*
(S) 4-Bromofluorobenzene	*96.7*			*80.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221838-1 05/28/17 11:42 • (LCSD) R3221838-2 05/28/17 11:57

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.0250	0.0241	0.0246	96.3	98.4	69.0-123			2.19	20
Ethylbenzene	0.0250	0.0235	0.0247	94.1	98.9	77.0-120			4.97	20
Toluene	0.0250	0.0240	0.0250	96.1	99.9	77.0-120			3.91	20
Xylenes, Total	0.0750	0.0698	0.0732	93.1	97.6	77.0-120			4.76	20
(S) Toluene-d8				*91.7*	*91.0*	*80.0-120*				
(S) Dibromofluoromethane				*92.4*	*89.2*	*76.0-123*				
(S) a,a,a-Trifluorotoluene				*91.3*	*91.0*	*80.0-120*				
(S) 4-Bromofluorobenzene				*85.8*	*85.4*	*80.0-120*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

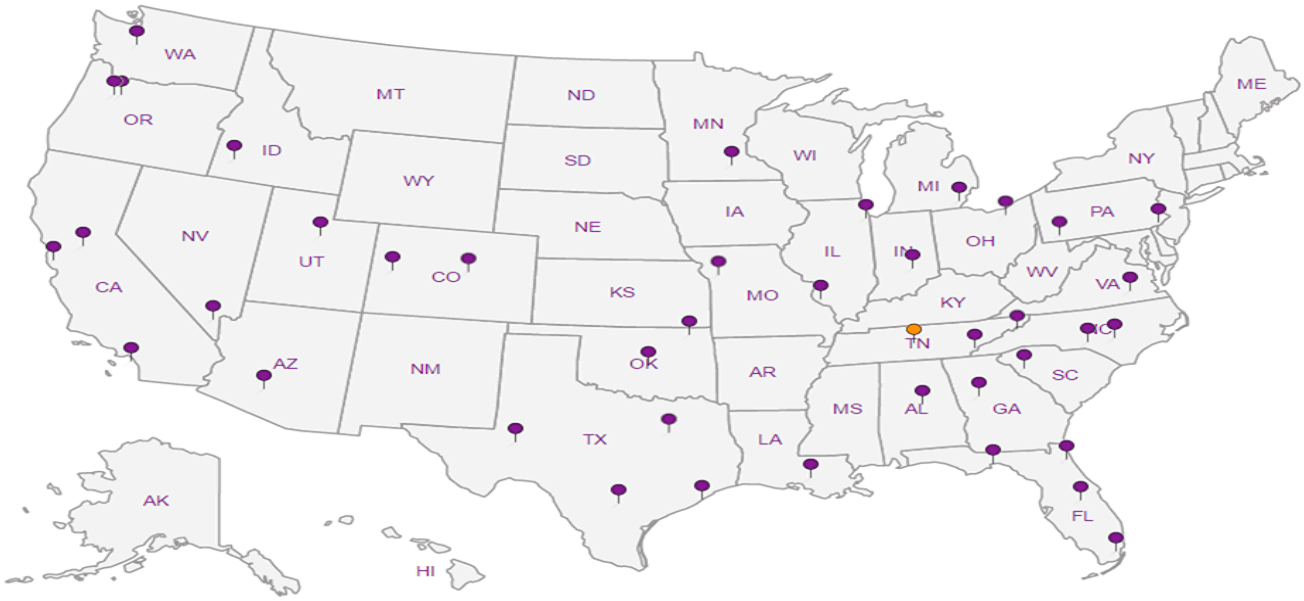
Third Party & Federal Accreditations

A2LA-ISO17025	1461.01	AIHA-LAP,LLC	100789
A2LA-ISO17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



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Matt Shacklock

ESC Lab Sciences
Non-Conforma nce f orm

login #911143 Client: TERRAlCO Date:S/23 Evaluated by:Michael

Non-conform ance 1c11eck a 1nl cable items J

	Sample Integrity		Chain of Custody Clarlflcatlon		
	Paramettt(s) past holding ume	x	""""n Clarification Ned		lfBroken Container:
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	Improper ortservatioo		Please specify TCLP requested.		lmoro,,..r ndline bv carrier ffedEx / UPS / Courie
	11nsufficient samole volume		Received addition.JI samples not l!Sted on COC.		Sample w.is frozen
	Sample /s biphaslc.		Sample ids on contai ners do not match Ids on coc		Container lld not lotat
	Vials recei with headspace.		Trip Blank not received.		If110 Cbalo of Custod v:
	Broken container		Client did no1X analysrs.		Rece1ved hv-
	Broken container:		Chain of Custodv is mlssln2		Date/Tlme:
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LoeJn Comments: SRG bottle for S31MW06 ls uppn:sernd

Client informed bv: TSR lnitials:OR	1C3ll	nEmail	X Voice Mail	Oate:S/l3	Time:l335
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ANALYTICAL REPORT

June 01, 2017

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L911346
Samples Received:	05/24/2017
Project Number:	22177002
Description:	City of Longmont (ol)

Report To: Mike Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

SGU-MW03 L911346-01 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 08:25
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983253	1	05/26/17 14:24	05/26/17 14:24	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/25/17 21:02	05/25/17 21:02	SAM
Wet Chemistry by Method 300.0	WG983856	5	05/30/17 12:34	05/30/17 12:34	KCF
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 14:12	05/24/17 14:12	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 12:58	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 12:53	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:43	05/26/17 09:43	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 11:41	05/28/17 11:41	LRL

SGU-MW02 L911346-02 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 08:40
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983253	1	05/26/17 14:32	05/26/17 14:32	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/25/17 21:16	05/25/17 21:16	SAM
Wet Chemistry by Method 300.0	WG982893	10	05/25/17 21:31	05/25/17 21:31	SAM
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 14:27	05/24/17 14:27	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:01	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:07	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:48	05/26/17 09:48	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 11:54	05/28/17 11:54	LRL

SGU-MW01 L911346-03 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 08:50
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983253	1	05/26/17 14:41	05/26/17 14:41	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/25/17 21:45	05/25/17 21:45	SAM
Wet Chemistry by Method 300.0	WG983856	5	05/30/17 14:17	05/30/17 14:17	KCF
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 14:43	05/24/17 14:43	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:04	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:11	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:52	05/26/17 09:52	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 12:07	05/28/17 12:07	LRL

PLI-MW02 L911346-04 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 09:45
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983253	1	05/26/17 14:48	05/26/17 14:48	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/25/17 22:14	05/25/17 22:14	SAM
Wet Chemistry by Method 300.0	WG982893	20	05/25/17 22:57	05/25/17 22:57	SAM
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 14:58	05/24/17 14:58	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:46	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:24	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:54	05/26/17 09:54	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 12:20	05/28/17 12:20	LRL

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

PLI-MW01 L911346-05 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 10:05
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983253	1.111111	05/26/17 14:58	05/26/17 14:58	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/25/17 23:12	05/25/17 23:12	SAM
Wet Chemistry by Method 300.0	WG982893	10	05/25/17 23:26	05/25/17 23:26	SAM
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 15:14	05/24/17 15:14	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:49	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:27	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 09:58	05/26/17 09:58	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 12:33	05/28/17 12:33	LRL

CLI-MW02 L911346-06 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 11:15
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983253	1	05/26/17 15:07	05/26/17 15:07	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/25/17 23:41	05/25/17 23:41	SAM
Wet Chemistry by Method 300.0	WG982893	10	05/25/17 23:55	05/25/17 23:55	SAM
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 15:29	05/24/17 15:29	KCF
Wet Chemistry by Method 9056A	WG982445	5	05/24/17 15:45	05/24/17 15:45	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:52	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:31	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 10:04	05/26/17 10:04	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 12:46	05/28/17 12:46	LRL

CLI-MW03 L911346-07 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 11:35
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984140	1	05/31/17 09:13	05/31/17 09:13	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/26/17 00:09	05/26/17 00:09	SAM
Wet Chemistry by Method 300.0	WG982893	10	05/26/17 00:24	05/26/17 00:24	SAM
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 16:31	05/24/17 16:31	KCF
Wet Chemistry by Method 9056A	WG982445	5	05/24/17 16:46	05/24/17 16:46	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:54	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:34	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 10:11	05/26/17 10:11	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 12:59	05/28/17 12:59	LRL

SH1-MW02 L911346-08 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 12:10
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984140	1	05/31/17 09:21	05/31/17 09:21	MCG
Wet Chemistry by Method 300.0	WG982893	1	05/26/17 00:38	05/26/17 00:38	SAM
Wet Chemistry by Method 300.0	WG982893	20	05/26/17 00:53	05/26/17 00:53	SAM
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 17:02	05/24/17 17:02	KCF
Wet Chemistry by Method 9056A	WG982445	5	05/24/17 17:17	05/24/17 17:17	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 13:57	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:38	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 10:13	05/26/17 10:13	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 13:12	05/28/17 13:12	LRL

SH2-MW03 L911346-09 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 12:55
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984140	1	05/31/17 09:28	05/31/17 09:28	MCG
Wet Chemistry by Method 300.0	WG982897	1	05/27/17 17:27	05/27/17 17:27	KCF
Wet Chemistry by Method 300.0	WG982897	20	05/27/17 17:44	05/27/17 17:44	KCF
Wet Chemistry by Method 9056A	WG982445	1	05/24/17 17:32	05/24/17 17:32	KCF
Wet Chemistry by Method 9056A	WG982445	5	05/24/17 17:48	05/24/17 17:48	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 14:00	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:41	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 10:15	05/26/17 10:15	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 13:24	05/28/17 13:24	LRL

SH2-MW01 L911346-10 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 13:10
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984140	1	05/31/17 09:46	05/31/17 09:46	MCG
Wet Chemistry by Method 300.0	WG982897	1	05/27/17 18:00	05/27/17 18:00	KCF
Wet Chemistry by Method 300.0	WG982897	20	05/27/17 18:16	05/27/17 18:16	KCF
Wet Chemistry by Method 9056A	WG982713	1	05/24/17 17:18	05/24/17 17:18	KCF
Wet Chemistry by Method 9056A	WG982713	5	05/24/17 17:32	05/24/17 17:32	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 14:12	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:45	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 10:22	05/26/17 10:22	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 13:37	05/28/17 13:37	LRL

SH2-MW02 L911346-11 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 13:20
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984140	1	05/31/17 09:54	05/31/17 09:54	MCG
Wet Chemistry by Method 300.0	WG982897	1	05/27/17 18:33	05/27/17 18:33	KCF
Wet Chemistry by Method 300.0	WG982897	20	05/27/17 18:49	05/27/17 18:49	KCF
Wet Chemistry by Method 9056A	WG982713	1	05/24/17 17:47	05/24/17 17:47	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 14:14	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:48	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983342	1	05/26/17 10:25	05/26/17 10:25	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 13:50	05/28/17 13:50	LRL

DMI-MW03 L911346-12 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 14:35
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983255	1	05/26/17 18:17	05/26/17 18:17	MCG
Wet Chemistry by Method 300.0	WG982897	1	05/27/17 21:17	05/27/17 21:17	KCF
Wet Chemistry by Method 300.0	WG982897	20	05/27/17 21:33	05/27/17 21:33	KCF
Wet Chemistry by Method 9056A	WG982713	1	05/24/17 20:13	05/24/17 20:13	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 14:17	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 13:52	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983343	1	05/26/17 11:12	05/26/17 11:12	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 14:03	05/28/17 14:03	LRL

DMI-MW02 L911346-13 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 14:50
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983255	1	05/26/17 18:24	05/26/17 18:24	MCG
Wet Chemistry by Method 300.0	WG982897	1	05/27/17 21:50	05/27/17 21:50	KCF
Wet Chemistry by Method 300.0	WG982897	20	05/27/17 22:06	05/27/17 22:06	KCF
Wet Chemistry by Method 9056A	WG982713	1	05/24/17 20:28	05/24/17 20:28	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 14:20	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 14:04	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983343	1	05/26/17 11:14	05/26/17 11:14	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 14:16	05/28/17 14:16	LRL

DMI-MW01 L911346-14 GW

Collected by: M. Skridulis
Collected date/time: 05/23/17 15:10
Received date/time: 05/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG983255	1	05/26/17 18:30	05/26/17 18:30	MCG
Wet Chemistry by Method 300.0	WG982897	1	05/27/17 22:23	05/27/17 22:23	KCF
Wet Chemistry by Method 300.0	WG982897	20	05/27/17 23:45	05/27/17 23:45	KCF
Wet Chemistry by Method 9056A	WG982713	1	05/24/17 20:43	05/24/17 20:43	KCF
Metals (ICP) by Method 6010B	WG984376	1	05/31/17 09:14	05/31/17 14:28	ST
Metals (ICPMS) by Method 6020	WG984067	1	05/31/17 10:18	05/31/17 14:07	JPD
Volatile Organic Compounds (GC) by Method RSK175	WG983343	1	05/26/17 11:16	05/26/17 11:16	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG983888	1	05/28/17 14:29	05/28/17 14:29	LRL

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	434		20.0	1	05/26/2017 14:24	WG983253

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		1.00	1	05/25/2017 21:02	WG982893
Chloride	41.8		1.00	1	05/25/2017 21:02	WG982893
Sulfate	220		25.0	5	05/30/2017 12:34	WG983856

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	9.15		0.100	1	05/24/2017 14:12	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 14:12	WG982445

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	137		1.00	1	05/31/2017 12:58	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 12:58	WG984376
Magnesium,Dissolved	67.0		1.00	1	05/31/2017 12:58	WG984376
Potassium,Dissolved	2.54		1.00	1	05/31/2017 12:58	WG984376
Sodium,Dissolved	64.5		1.00	1	05/31/2017 12:58	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	2.10	V	0.0100	1	05/31/2017 12:53	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	05/26/2017 09:43	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:43	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:43	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 11:41	WG983888
Toluene	ND		0.00100	1	05/28/2017 11:41	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 11:41	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 11:41	WG983888
(S) Toluene-d8	*104*		*80.0-120*		*05/28/2017 11:41*	WG983888
(S) Dibromofluoromethane	*105*		*76.0-123*		*05/28/2017 11:41*	WG983888
(S) a,a,a-Trifluorotoluene	*103*		*80.0-120*		*05/28/2017 11:41*	WG983888
(S) 4-Bromofluorobenzene	*94.6*		*80.0-120*		*05/28/2017 11:41*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	482		20.0	1	05/26/2017 14:32	WG983253

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	3.29		1.00	1	05/25/2017 21:16	WG982893
Chloride	438		10.0	10	05/25/2017 21:31	WG982893
Sulfate	223		50.0	10	05/25/2017 21:31	WG982893

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	1.37		0.100	1	05/24/2017 14:27	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 14:27	WG982445

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	142		1.00	1	05/31/2017 13:01	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:01	WG984376
Magnesium,Dissolved	79.7		1.00	1	05/31/2017 13:01	WG984376
Potassium,Dissolved	10.8		1.00	1	05/31/2017 13:01	WG984376
Sodium,Dissolved	271		1.00	1	05/31/2017 13:01	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	4.16		0.0100	1	05/31/2017 13:07	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	0.0884		0.0100	1	05/26/2017 09:48	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:48	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:48	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	0.0353		0.00100	1	05/28/2017 11:54	WG983888
Toluene	ND		0.00100	1	05/28/2017 11:54	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 11:54	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 11:54	WG983888
(S) Toluene-d8	*103*		*80.0-120*		*05/28/2017 11:54*	WG983888
(S) Dibromofluoromethane	*103*		*76.0-123*		*05/28/2017 11:54*	WG983888
(S) a,a,a-Trifluorotoluene	*102*		*80.0-120*		*05/28/2017 11:54*	WG983888
(S) 4-Bromofluorobenzene	*93.6*		*80.0-120*		*05/28/2017 11:54*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	400		20.0	1	05/26/2017 14:41	WG983253

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		1.00	1	05/25/2017 21:45	WG982893
Chloride	39.3		1.00	1	05/25/2017 21:45	WG982893
Sulfate	192		25.0	5	05/30/2017 14:17	WG983856

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	7.39		0.100	1	05/24/2017 14:43	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 14:43	WG982445

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	118		1.00	1	05/31/2017 13:04	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:04	WG984376
Magnesium,Dissolved	65.2		1.00	1	05/31/2017 13:04	WG984376
Potassium,Dissolved	3.03		1.00	1	05/31/2017 13:04	WG984376
Sodium,Dissolved	72.0		1.00	1	05/31/2017 13:04	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	1.86		0.0100	1	05/31/2017 13:11	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	05/26/2017 09:52	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:52	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:52	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 12:07	WG983888
Toluene	ND		0.00100	1	05/28/2017 12:07	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 12:07	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 12:07	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 12:07*	WG983888
(S) Dibromofluoromethane	*105*		*76.0-123*		*05/28/2017 12:07*	WG983888
(S) a,a,a-Trifluorotoluene	*103*		*80.0-120*		*05/28/2017 12:07*	WG983888
(S) 4-Bromofluorobenzene	*95.3*		*80.0-120*		*05/28/2017 12:07*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	321		20.0	1	05/26/2017 14:48	WG983253

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/25/2017 22:14	WG982893
Chloride	39.7		1.00	1	05/25/2017 22:14	WG982893
Sulfate	688		100	20	05/25/2017 22:57	WG982893

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		0.100	1	05/24/2017 14:58	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 14:58	WG982445

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	143		1.00	1	05/31/2017 13:46	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:46	WG984376
Magnesium,Dissolved	97.9		1.00	1	05/31/2017 13:46	WG984376
Potassium,Dissolved	2.63		1.00	1	05/31/2017 13:46	WG984376
Sodium,Dissolved	165		1.00	1	05/31/2017 13:46	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	1.92		0.0100	1	05/31/2017 13:24	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	0.0231		0.0100	1	05/26/2017 09:54	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:54	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:54	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 12:20	WG983888
Toluene	ND		0.00100	1	05/28/2017 12:20	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 12:20	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 12:20	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 12:20*	WG983888
(S) Dibromofluoromethane	*104*		*76.0-123*		*05/28/2017 12:20*	WG983888
(S) a,a,a-Trifluorotoluene	*102*		*80.0-120*		*05/28/2017 12:20*	WG983888
(S) 4-Bromofluorobenzene	*92.6*		*80.0-120*		*05/28/2017 12:20*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	235		22.2	1.111111	05/26/2017 14:58	WG983253

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		1.00	1	05/25/2017 23:12	WG982893
Chloride	33.8		1.00	1	05/25/2017 23:12	WG982893
Sulfate	370		50.0	10	05/25/2017 23:26	WG982893

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	9.36		0.100	1	05/24/2017 15:14	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 15:14	WG982445

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	104		1.00	1	05/31/2017 13:49	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:49	WG984376
Magnesium,Dissolved	75.1		1.00	1	05/31/2017 13:49	WG984376
Potassium,Dissolved	1.64		1.00	1	05/31/2017 13:49	WG984376
Sodium,Dissolved	89.9		1.00	1	05/31/2017 13:49	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	1.64		0.0100	1	05/31/2017 13:27	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	05/26/2017 09:58	WG983342
Ethane	ND		0.0130	1	05/26/2017 09:58	WG983342
Ethene	ND		0.0130	1	05/26/2017 09:58	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 12:33	WG983888
Toluene	ND		0.00100	1	05/28/2017 12:33	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 12:33	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 12:33	WG983888
(S) Toluene-d8	*104*		*80.0-120*		*05/28/2017 12:33*	WG983888
(S) Dibromofluoromethane	*103*		*76.0-123*		*05/28/2017 12:33*	WG983888
(S) a,a,a-Trifluorotoluene	*103*		*80.0-120*		*05/28/2017 12:33*	WG983888
(S) 4-Bromofluorobenzene	*94.9*		*80.0-120*		*05/28/2017 12:33*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	416		20.0	1	05/26/2017 15:07	WG983253

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/25/2017 23:41	WG982893
Chloride	44.7		1.00	1	05/25/2017 23:41	WG982893
Sulfate	209		50.0	10	05/25/2017 23:55	WG982893

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	9.75		0.500	5	05/24/2017 15:45	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 15:29	WG982445

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	96.8		1.00	1	05/31/2017 13:52	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:52	WG984376
Magnesium,Dissolved	77.2		1.00	1	05/31/2017 13:52	WG984376
Potassium,Dissolved	1.91		1.00	1	05/31/2017 13:52	WG984376
Sodium,Dissolved	89.5		1.00	1	05/31/2017 13:52	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	2.24		0.0100	1	05/31/2017 13:31	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 10:04	WG983342
Ethane	ND		0.0130	1	05/26/2017 10:04	WG983342
Ethene	ND		0.0130	1	05/26/2017 10:04	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 12:46	WG983888
Toluene	ND		0.00100	1	05/28/2017 12:46	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 12:46	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 12:46	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 12:46*	WG983888
(S) Dibromofluoromethane	*103*		*76.0-123*		*05/28/2017 12:46*	WG983888
(S) a,a,a-Trifluorotoluene	*102*		*80.0-120*		*05/28/2017 12:46*	WG983888
(S) 4-Bromofluorobenzene	*95.8*		*80.0-120*		*05/28/2017 12:46*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	381		20.0	1	05/31/2017 09:13	WG984140

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/26/2017 00:09	WG982893
Chloride	44.4		1.00	1	05/26/2017 00:09	WG982893
Sulfate	163		50.0	10	05/26/2017 00:24	WG982893

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	13.1		0.500	5	05/24/2017 16:46	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 16:31	WG982445

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	90.3		1.00	1	05/31/2017 13:54	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:54	WG984376
Magnesium,Dissolved	70.2		1.00	1	05/31/2017 13:54	WG984376
Potassium,Dissolved	1.89		1.00	1	05/31/2017 13:54	WG984376
Sodium,Dissolved	86.4		1.00	1	05/31/2017 13:54	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	2.01		0.0100	1	05/31/2017 13:34	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 10:11	WG983342
Ethane	ND		0.0130	1	05/26/2017 10:11	WG983342
Ethene	ND		0.0130	1	05/26/2017 10:11	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 12:59	WG983888
Toluene	ND		0.00100	1	05/28/2017 12:59	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 12:59	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 12:59	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 12:59*	WG983888
(S) Dibromofluoromethane	*106*		*76.0-123*		*05/28/2017 12:59*	WG983888
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*05/28/2017 12:59*	WG983888
(S) 4-Bromofluorobenzene	*94.9*		*80.0-120*		*05/28/2017 12:59*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	418		20.0	1	05/31/2017 09:21	WG984140

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/26/2017 00:38	WG982893
Chloride	72.8		1.00	1	05/26/2017 00:38	WG982893
Sulfate	930		100	20	05/26/2017 00:53	WG982893

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	15.0		0.500	5	05/24/2017 17:17	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 17:02	WG982445

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	168		1.00	1	05/31/2017 13:57	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 13:57	WG984376
Magnesium,Dissolved	195		1.00	1	05/31/2017 13:57	WG984376
Potassium,Dissolved	2.57		1.00	1	05/31/2017 13:57	WG984376
Sodium,Dissolved	194		1.00	1	05/31/2017 13:57	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	3.80		0.0100	1	05/31/2017 13:38	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 10:13	WG983342
Ethane	ND		0.0130	1	05/26/2017 10:13	WG983342
Ethene	ND		0.0130	1	05/26/2017 10:13	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 13:12	WG983888
Toluene	ND		0.00100	1	05/28/2017 13:12	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 13:12	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 13:12	WG983888
(S) Toluene-d8	*104*		*80.0-120*		*05/28/2017 13:12*	WG983888
(S) Dibromofluoromethane	*106*		*76.0-123*		*05/28/2017 13:12*	WG983888
(S) a,a,a-Trifluorotoluene	*99.6*		*80.0-120*		*05/28/2017 13:12*	WG983888
(S) 4-Bromofluorobenzene	*93.7*		*80.0-120*		*05/28/2017 13:12*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	295		20.0	1	05/31/2017 09:28	WG984140

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		1.00	1	05/27/2017 17:27	WG982897
Chloride	56.3		1.00	1	05/27/2017 17:27	WG982897
Sulfate	833		100	20	05/27/2017 17:44	WG982897

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	11.5		0.500	5	05/24/2017 17:48	WG982445
Nitrite as (N)	ND		0.100	1	05/24/2017 17:32	WG982445

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	282		1.00	1	05/31/2017 14:00	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 14:00	WG984376
Magnesium,Dissolved	116		1.00	1	05/31/2017 14:00	WG984376
Potassium,Dissolved	11.7		1.00	1	05/31/2017 14:00	WG984376
Sodium,Dissolved	119		1.00	1	05/31/2017 14:00	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	4.30		0.0100	1	05/31/2017 13:41	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	05/26/2017 10:15	WG983342
Ethane	ND		0.0130	1	05/26/2017 10:15	WG983342
Ethene	ND		0.0130	1	05/26/2017 10:15	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 13:24	WG983888
Toluene	ND		0.00100	1	05/28/2017 13:24	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 13:24	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 13:24	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 13:24*	WG983888
(S) Dibromofluoromethane	*106*		*76.0-123*		*05/28/2017 13:24*	WG983888
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*05/28/2017 13:24*	WG983888
(S) 4-Bromofluorobenzene	*93.3*		*80.0-120*		*05/28/2017 13:24*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	291		20.0	1	05/31/2017 09:46	WG984140

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/27/2017 18:00	WG982897
Chloride	52.7		1.00	1	05/27/2017 18:00	WG982897
Sulfate	836		100	20	05/27/2017 18:16	WG982897

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	11.3		0.500	5	05/24/2017 17:32	WG982713
Nitrite as (N)	ND		0.100	1	05/24/2017 17:18	WG982713

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	250		1.00	1	05/31/2017 14:12	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 14:12	WG984376
Magnesium,Dissolved	135		1.00	1	05/31/2017 14:12	WG984376
Potassium,Dissolved	2.56		1.00	1	05/31/2017 14:12	WG984376
Sodium,Dissolved	116		1.00	1	05/31/2017 14:12	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	3.65		0.0100	1	05/31/2017 13:45	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 10:22	WG983342
Ethane	ND		0.0130	1	05/26/2017 10:22	WG983342
Ethene	ND		0.0130	1	05/26/2017 10:22	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 13:37	WG983888
Toluene	ND		0.00100	1	05/28/2017 13:37	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 13:37	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 13:37	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 13:37*	WG983888
(S) Dibromofluoromethane	*106*		*76.0-123*		*05/28/2017 13:37*	WG983888
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*05/28/2017 13:37*	WG983888
(S) 4-Bromofluorobenzene	*93.7*		*80.0-120*		*05/28/2017 13:37*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	210		20.0	1	05/31/2017 09:54	WG984140

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	05/27/2017 18:33	WG982897
Chloride	47.1		1.00	1	05/27/2017 18:33	WG982897
Sulfate	824		100	20	05/27/2017 18:49	WG982897

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	8.13		0.100	1	05/24/2017 17:47	WG982713
Nitrite as (N)	ND		0.100	1	05/24/2017 17:47	WG982713

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	233		1.00	1	05/31/2017 14:14	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 14:14	WG984376
Magnesium,Dissolved	129		1.00	1	05/31/2017 14:14	WG984376
Potassium,Dissolved	3.87		1.00	1	05/31/2017 14:14	WG984376
Sodium,Dissolved	115		1.00	1	05/31/2017 14:14	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	3.64		0.0100	1	05/31/2017 13:48	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	05/26/2017 10:25	WG983342
Ethane	ND		0.0130	1	05/26/2017 10:25	WG983342
Ethene	ND		0.0130	1	05/26/2017 10:25	WG983342

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 13:50	WG983888
Toluene	ND		0.00100	1	05/28/2017 13:50	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 13:50	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 13:50	WG983888
(S) Toluene-d8	*106*		*80.0-120*		*05/28/2017 13:50*	WG983888
(S) Dibromofluoromethane	*108*		*76.0-123*		*05/28/2017 13:50*	WG983888
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*05/28/2017 13:50*	WG983888
(S) 4-Bromofluorobenzene	*92.6*		*80.0-120*		*05/28/2017 13:50*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	258		20.0	1	05/26/2017 18:17	WG983255

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	1.31		1.00	1	05/27/2017 21:17	WG982897
Chloride	121		20.0	20	05/27/2017 21:33	WG982897
Sulfate	589		100	20	05/27/2017 21:33	WG982897

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	5.83		0.100	1	05/24/2017 20:13	WG982713
Nitrite as (N)	ND		0.100	1	05/24/2017 20:13	WG982713

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	145		1.00	1	05/31/2017 14:17	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 14:17	WG984376
Magnesium,Dissolved	77.5		1.00	1	05/31/2017 14:17	WG984376
Potassium,Dissolved	2.25		1.00	1	05/31/2017 14:17	WG984376
Sodium,Dissolved	193		1.00	1	05/31/2017 14:17	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	1.28		0.0100	1	05/31/2017 13:52	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	05/26/2017 11:12	WG983343
Ethane	ND		0.0130	1	05/26/2017 11:12	WG983343
Ethene	ND		0.0130	1	05/26/2017 11:12	WG983343

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 14:03	WG983888
Toluene	ND		0.00100	1	05/28/2017 14:03	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 14:03	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 14:03	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 14:03*	WG983888
(S) Dibromofluoromethane	*108*		*76.0-123*		*05/28/2017 14:03*	WG983888
(S) a,a,a-Trifluorotoluene	*100*		*80.0-120*		*05/28/2017 14:03*	WG983888
(S) 4-Bromofluorobenzene	*91.2*		*80.0-120*		*05/28/2017 14:03*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	330		20.0	1	05/26/2017 18:24	WG983255

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	1.15		1.00	1	05/27/2017 21:50	WG982897
Chloride	80.4		1.00	1	05/27/2017 21:50	WG982897
Sulfate	185		100	20	05/27/2017 22:06	WG982897

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	0.440		0.100	1	05/24/2017 20:28	WG982713
Nitrite as (N)	ND		0.100	1	05/24/2017 20:28	WG982713

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	66.0		1.00	1	05/31/2017 14:20	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 14:20	WG984376
Magnesium,Dissolved	55.8		1.00	1	05/31/2017 14:20	WG984376
Potassium,Dissolved	5.55		1.00	1	05/31/2017 14:20	WG984376
Sodium,Dissolved	127		1.00	1	05/31/2017 14:20	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	0.729		0.0100	1	05/31/2017 14:04	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	0.0152		0.0100	1	05/26/2017 11:14	WG983343
Ethane	ND		0.0130	1	05/26/2017 11:14	WG983343
Ethene	ND		0.0130	1	05/26/2017 11:14	WG983343

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	05/28/2017 14:16	WG983888
Toluene	ND		0.00100	1	05/28/2017 14:16	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 14:16	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 14:16	WG983888
(S) Toluene-d8	*105*		*80.0-120*		*05/28/2017 14:16*	WG983888
(S) Dibromofluoromethane	*108*		*76.0-123*		*05/28/2017 14:16*	WG983888
(S) a,a,a-Trifluorotoluene	*97.5*		*80.0-120*		*05/28/2017 14:16*	WG983888
(S) 4-Bromofluorobenzene	*93.2*		*80.0-120*		*05/28/2017 14:16*	WG983888

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	410		20.0	1	05/26/2017 18:30	WG983255

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	1.66		1.00	1	05/27/2017 22:23	WG982897
Chloride	76.9		1.00	1	05/27/2017 22:23	WG982897
Sulfate	180		100	20	05/27/2017 23:45	WG982897

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		0.100	1	05/24/2017 20:43	WG982713
Nitrite as (N)	ND		0.100	1	05/24/2017 20:43	WG982713

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	55.3		1.00	1	05/31/2017 14:28	WG984376
Iron,Dissolved	ND		0.100	1	05/31/2017 14:28	WG984376
Magnesium,Dissolved	69.3		1.00	1	05/31/2017 14:28	WG984376
Potassium,Dissolved	2.54		1.00	1	05/31/2017 14:28	WG984376
Sodium,Dissolved	143		1.00	1	05/31/2017 14:28	WG984376

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	1.07		0.0100	1	05/31/2017 14:07	WG984067

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	0.213		0.0100	1	05/26/2017 11:16	WG983343
Ethane	ND		0.0130	1	05/26/2017 11:16	WG983343
Ethene	ND		0.0130	1	05/26/2017 11:16	WG983343

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	05/28/2017 14:29	WG983888
Toluene	ND		0.00100	1	05/28/2017 14:29	WG983888
Ethylbenzene	ND		0.00100	1	05/28/2017 14:29	WG983888
Total Xylenes	ND		0.00300	1	05/28/2017 14:29	WG983888
(S) Toluene-d8	*106*		*80.0-120*		*05/28/2017 14:29*	WG983888
(S) Dibromofluoromethane	*108*		*76.0-123*		*05/28/2017 14:29*	WG983888
(S) a,a,a-Trifluorotoluene	*100*		*80.0-120*		*05/28/2017 14:29*	WG983888
(S) 4-Bromofluorobenzene	*93.1*		*80.0-120*		*05/28/2017 14:29*	WG983888

Method Blank (MB)

(MB) R3221625-1 05/26/17 14:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Alkalinity	3.44	J	2.71	20.0

L911413-02 Original Sample (OS) • Duplicate (DUP)

(OS) L911413-02 05/26/17 15:14 • (DUP) R3221625-2 05/26/17 15:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	260	255	1	2.00		20

L911737-09 Original Sample (OS) • Duplicate (DUP)

(OS) L911737-09 05/26/17 17:26 • (DUP) R3221625-5 05/26/17 17:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	272	275	1	1.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221625-3 05/26/17 15:36 • (LCSD) R3221625-4 05/26/17 16:55

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Alkalinity	100	113	110	113	110	85.0-115			3.00	20

Method Blank (MB)

(MB) R3221626-2 05/26/17 18:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Alkalinity	5.40	J	2.71	20.0

L911369-01 Original Sample (OS) • Duplicate (DUP)

(OS) L911369-01 05/26/17 18:37 • (DUP) R3221626-3 05/26/17 18:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	137	132	1	4.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221626-4 05/26/17 19:18 • (LCSD) R3221626-5 05/26/17 20:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Alkalinity	100	108	104	108	104	85.0-115			4.00	20

Method Blank (MB)

(MB) R3222420-1 05/31/17 08:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	3.10	J	2.71	20.0

L911583-01 Original Sample (OS) • Duplicate (DUP)

(OS) L911583-01 05/31/17 08:34 • (DUP) R3222420-2 05/31/17 08:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	70.8	70.7	1	0.000		20

L911854-04 Original Sample (OS) • Duplicate (DUP)

(OS) L911854-04 05/31/17 11:27 • (DUP) R3222420-5 05/31/17 11:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	47.2	43.1	1	9.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222420-3 05/31/17 09:35 • (LCSD) R3222420-4 05/31/17 10:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	108	108	108	108	85.0-115			0.000	20

Method Blank (MB)

(MB) R3221369-1 05/25/17 06:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.079	1.00
Chloride	U		0.0519	1.00
Sulfate	0.1	J	0.0774	5.00

L910831-01 Original Sample (OS) • Duplicate (DUP)

(OS) L910831-01 05/25/17 16:20 • (DUP) R3221369-6 05/25/17 16:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	U	0.000	10	0		20
Chloride	95.4	97.7	10	2		20
Sulfate	488	477	10	2		20

L911069-02 Original Sample (OS) • Duplicate (DUP)

(OS) L911069-02 05/25/17 20:33 • (DUP) R3221369-7 05/25/17 20:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	5.16	10	0		20
Chloride	315	315	10	0		20
Sulfate	407	410	10	1		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221369-2 05/25/17 07:13 • (LCSD) R3221369-3 05/25/17 07:27

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Bromide	40.0	40.1	40.3	100	101	90-110			0	20
Chloride	40.0	39.9	40.0	100	100	90-110			0	20
Sulfate	40.0	40.2	40.3	100	101	90-110			0	20

L911006-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911006-02 05/25/17 15:23 • (MS) R3221369-4 05/25/17 15:51 • (MSD) R3221369-5 05/25/17 16:06

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	ND	ND	ND	0	0	1	80-120	J6	J6	0	20
Chloride	50.0	40.1	90.7	91.6	101	103	1	80-120			1	20

L911346-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L911346-03 05/25/17 21:45 • (MS) R3221369-8 05/25/17 22:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	ND	48.5	96	1	80-120	
Chloride	50.0	39.3	90.0	101	1	80-120	

Method Blank (MB)

(MB) R3221710-2 05/27/17 06:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.079	1.00
Chloride	U		0.0519	1.00
Sulfate	U		0.0774	5.00

L911542-06 Original Sample (OS) • Duplicate (DUP)

(OS) L911542-06 05/27/17 19:06 • (DUP) R3221710-5 05/27/17 19:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	U	0.000	1	0		20
Chloride	30.4	30.0	1	1		20
Sulfate	46.0	45.7	1	1		20

L911374-01 Original Sample (OS) • Duplicate (DUP)

(OS) L911374-01 05/28/17 00:01 • (DUP) R3221710-7 05/28/17 00:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	0.000	1	0		20
Chloride	22.2	22.2	1	0		20
Sulfate	ND	0.907	1	1	J	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221710-3 05/27/17 06:39 • (LCSD) R3221710-4 05/27/17 06:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Bromide	40.0	40.6	40.5	101	101	90-110			0	20
Chloride	40.0	40.3	40.2	101	101	90-110			0	20
Sulfate	40.0	40.3	40.2	101	101	90-110			0	20

L911376-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911376-01 05/28/17 00:34 • (MS) R3221710-8 05/28/17 00:50 • (MSD) R3221710-9 05/28/17 01:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	ND	50.4	51.2	101	102	1	80-120			1	20
Chloride	50.0	84.8	132	132	95	95	1	80-120	E	E	0	20

L911376-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911376-01 05/28/17 00:34 • (MS) R3221710-8 05/28/17 00:50 • (MSD) R3221710-9 05/28/17 01:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50.0	7.83	59.3	59.2	103	103	1	80-120			0	20

Method Blank (MB)

(MB) R3222032-1 05/30/17 10:36

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Sulfate	U		0.0774	5.00

L911723-04 Original Sample (OS) • Duplicate (DUP)

(OS) L911723-04 05/30/17 12:49 • (DUP) R3222032-4 05/30/17 13:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Sulfate	1190	1170	20	1		20

L911723-05 Original Sample (OS) • Duplicate (DUP)

(OS) L911723-05 05/30/17 15:30 • (DUP) R3222032-6 05/30/17 15:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Sulfate	1170	1160	20	1		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222032-2 05/30/17 10:51 • (LCSD) R3222032-3 05/30/17 11:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Sulfate	40.0	40.1	39.8	100	100	90-110			1	20

L911750-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911750-01 05/30/17 16:43 • (MS) R3222032-7 05/30/17 16:58 • (MSD) R3222032-8 05/30/17 17:13

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfate	50.0	24.4	73.8	73.8	99	99	1	80-120			0	20

Method Blank (MB)

(MB) R3220926-1 05/24/17 05:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100

L911201-02 Original Sample (OS) • Duplicate (DUP)

(OS) L911201-02 05/24/17 09:06 • (DUP) R3220926-4 05/24/17 10:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Nitrate	0.0658	0.0652	1	1	J	15
Nitrite	U	0.000	1	0		15

L911329-01 Original Sample (OS) • Duplicate (DUP)

(OS) L911329-01 05/24/17 13:42 • (DUP) R3220926-6 05/24/17 13:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Nitrate	1.20	1.22	1	2		15
Nitrite	ND	0.000	1	0		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3220926-2 05/24/17 05:56 • (LCSD) R3220926-3 05/24/17 06:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Nitrate	8.00	8.19	8.20	102	102	80-120			0	15
Nitrite	8.00	8.07	8.08	101	101	80-120			0	15

L911201-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L911201-07 05/24/17 09:37 • (MS) R3220926-5 05/24/17 10:54

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Nitrate	5.00	0.127	5.20	102	1	80-120	
Nitrite	5.00	U	5.25	105	1	80-120	

L911346-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911346-09 05/24/17 17:32 • (MS) R3220926-7 05/24/17 18:03 • (MSD) R3220926-8 05/24/17 18:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrite	5.00	ND	5.30	5.23	106	105	1	80-120			1	15

Method Blank (MB)

(MB) R3220901-1 05/24/17 15:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100

L911346-11 Original Sample (OS) • Duplicate (DUP)

(OS) L911346-11 05/24/17 17:47 • (DUP) R3220901-4 05/24/17 18:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	8.13	8.24	1	1		15
Nitrite	ND	0.000	1	0		15

L911463-02 Original Sample (OS) • Duplicate (DUP)

(OS) L911463-02 05/24/17 22:55 • (DUP) R3220901-6 05/24/17 23:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	ND	0.000	1	0		15
Nitrite	ND	0.000	1	0		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3220901-2 05/24/17 15:48 • (LCSD) R3220901-3 05/24/17 16:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Nitrate	8.00	8.11	8.15	101	102	80-120			0	15
Nitrite	8.00	8.02	8.05	100	101	80-120			0	15

L911438-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L911438-01 05/24/17 21:27 • (MS) R3220901-5 05/24/17 21:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate	5.00	0.188	5.17	100	1	80-120	
Nitrite	5.00	ND	5.41	107	1	80-120	

L911463-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911463-08 05/25/17 00:52 • (MS) R3220901-7 05/25/17 01:07 • (MSD) R3220901-8 05/25/17 01:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate	5.00	0.621	5.46	5.51	97	98	1	80-120			1	15

Method Blank (MB)

(MB) R3222304-1 05/31/17 12:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Calcium,Dissolved	U		0.0463	1.00
Iron,Dissolved	U		0.0141	0.100
Magnesium,Dissolved	U		0.0111	1.00
Potassium,Dissolved	U		0.102	1.00
Sodium,Dissolved	0.259	J	0.0985	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222304-2 05/31/17 12:43 • (LCSD) R3222304-3 05/31/17 12:45

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Calcium,Dissolved	10.0	9.96	10.1	100	101	80-120			1	20
Iron,Dissolved	10.0	10.0	10.2	100	102	80-120			1	20
Magnesium,Dissolved	10.0	10.2	10.4	102	104	80-120			1	20
Potassium,Dissolved	10.0	10.6	10.7	106	107	80-120			1	20
Sodium,Dissolved	10.0	9.90	10.1	99	101	80-120			2	20

L911543-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911543-01 05/31/17 12:48 • (MS) R3222304-5 05/31/17 12:53 • (MSD) R3222304-6 05/31/17 12:56

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Calcium,Dissolved	10.0	133	141	140	77	74	1	75-125		V	0	20
Iron,Dissolved	10.0	U	10.1	10.0	101	100	1	75-125			0	20
Magnesium,Dissolved	10.0	23.4	33.2	32.9	98	96	1	75-125			1	20
Potassium,Dissolved	10.0	13.1	23.5	23.4	104	103	1	75-125			0	20
Sodium,Dissolved	10.0	78.9	87.3	87.4	83	85	1	75-125			0	20

Method Blank (MB)

(MB) R3222193-1 05/31/17 12:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Strontium	0.000418	J	0.00016	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222193-2 05/31/17 12:46 • (LCSD) R3222193-3 05/31/17 12:50

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Strontium	0.0500	0.0490	0.0513	98	103	80-120			4	20

L911346-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911346-01 05/31/17 12:53 • (MS) R3222193-5 05/31/17 13:00 • (MSD) R3222193-6 05/31/17 13:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Strontium	0.0500	2.10	2.12	2.13	50	67	1	75-125	V	V	0	20

Method Blank (MB)

(MB) R3221203-1 05/26/17 08:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L911143-07 Original Sample (OS) • Duplicate (DUP)

(OS) L911143-07 05/26/17 09:09 • (DUP) R3221203-2 05/26/17 09:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L911346-05 Original Sample (OS) • Duplicate (DUP)

(OS) L911346-05 05/26/17 09:58 • (DUP) R3221203-3 05/26/17 10:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221203-4 05/26/17 10:32 • (LCSD) R3221203-5 05/26/17 10:34

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Methane	0.0678	0.0704	0.0738	104	109	85.0-115			4.81	20
Ethane	0.129	0.120	0.128	93.0	99.1	85.0-115			6.32	20
Ethene	0.127	0.117	0.124	92.0	97.5	85.0-115			5.78	20

Method Blank (MB)

(MB) R3221247-1 05/26/17 11:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L911346-14 Original Sample (OS) • Duplicate (DUP)

(OS) L911346-14 05/26/17 11:16 • (DUP) R3221247-2 05/26/17 11:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	0.213	0.216	1	1.42		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L911551-02 Original Sample (OS) • Duplicate (DUP)

(OS) L911551-02 05/26/17 11:45 • (DUP) R3221247-3 05/26/17 13:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	0.640	0.620	1	3.17		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221247-4 05/26/17 13:10 • (LCSD) R3221247-5 05/26/17 13:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Methane	0.0678	0.0753	0.0640	111	94.3	85.0-115			16.2	20
Ethane	0.129	0.136	0.120	105	93.4	85.0-115			12.0	20
Ethene	0.127	0.133	0.117	105	92.1	85.0-115			12.6	20

Method Blank (MB)

(MB) R3221577-2 05/28/17 10:21

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*104*			*80.0-120*
(S) Dibromofluoromethane	*102*			*76.0-123*
(S) a,a,a-Trifluorotoluene	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.9*			*80.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221577-1 05/28/17 09:42 • (LCSD) R3221577-3 05/28/17 10:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0235	0.0216	93.8	86.4	69.0-123			8.21	20
Ethylbenzene	0.0250	0.0231	0.0207	92.4	82.7	77.0-120			11.1	20
Toluene	0.0250	0.0234	0.0213	93.7	85.1	77.0-120			9.70	20
Xylenes, Total	0.0750	0.0685	0.0615	91.3	82.0	77.0-120			10.8	20
(S) Toluene-d8				*103*	*103*	*80.0-120*				
(S) Dibromofluoromethane				*103*	*105*	*76.0-123*				
(S) a,a,a-Trifluorotoluene				*101*	*100*	*80.0-120*				
(S) 4-Bromofluorobenzene				*95.8*	*96.2*	*80.0-120*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

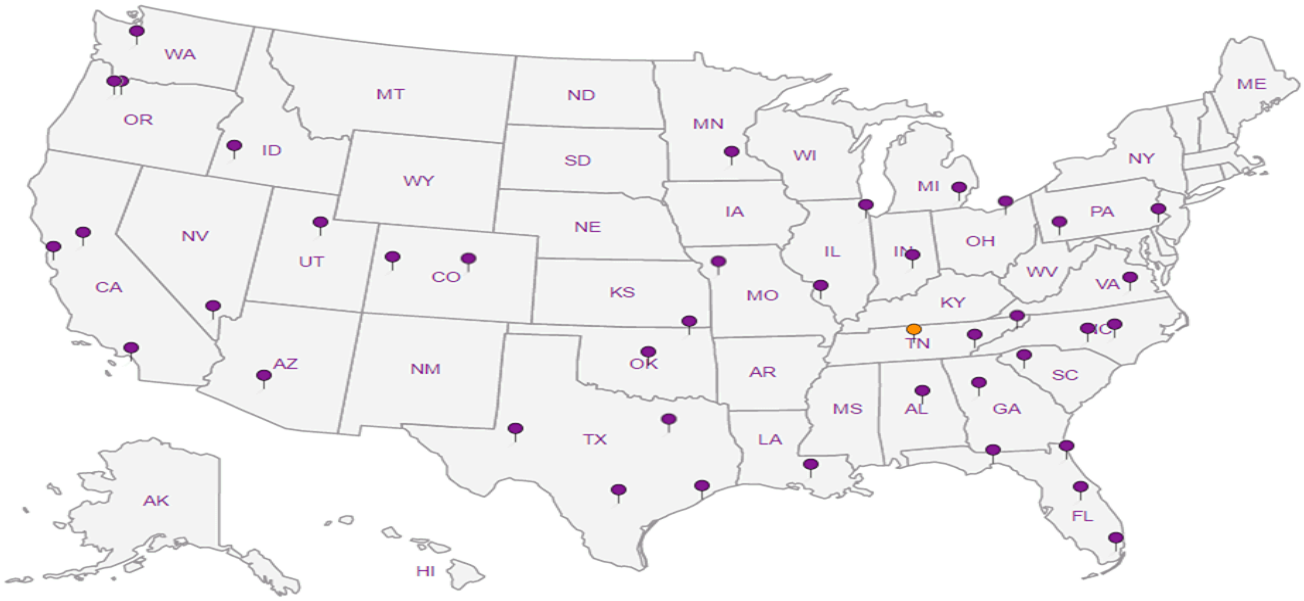
Third Party & Federal Accreditations

A2LA-ISO17025	1461.01	AIHA-LAP,LLC	100789
A2LA-ISO17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Jerrao:>n ConsultantsJnc -
Longrront,CO

242 Bra.,,wood Place

Report to:
Mike Skfdulls

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U42 Bramwood Place

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Terracon Consu1tantr,tn -
Longmont,CO

1242 Bramwood Place

Report to:

AIJlnlorma·-·
Mia Pacelli

U42 Bramwood Place
Longmont, CO 80501

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ANALYTICAL REPORT

June 05, 2017

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L912079
Samples Received:	05/26/2017
Project Number:	22177002
Description:	City of Longmont (COL)

Report To: Mike Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

TABLE OF CONTENTS

EGW-MW01 L912079-01 GW

Collected by: M. Skridulis
Collected date/time: 05/25/17 09:35
Received date/time: 05/26/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984714	1	06/02/17 10:26	06/02/17 10:26	MCG
Wet Chemistry by Method 300.0	WG984338	1	06/01/17 13:17	06/01/17 13:17	SAM
Wet Chemistry by Method 300.0	WG984338	50	06/01/17 13:58	06/01/17 13:58	SAM
Wet Chemistry by Method 9056A	WG983563	1	05/26/17 17:53	05/26/17 17:53	SAM
Metals (ICP) by Method 6010B	WG984773	1	06/01/17 16:40	06/01/17 19:53	CCE
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:23	VSS
Volatile Organic Compounds (GC) by Method RSK175	WG984262	1	06/01/17 11:44	06/01/17 11:44	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG985562	1	06/03/17 04:21	06/03/17 04:21	DWR

EGW-MW03 L912079-02 GW

Collected by: M. Skridulis
Collected date/time: 05/25/17 09:45
Received date/time: 05/26/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984714	1	06/02/17 10:33	06/02/17 10:33	MCG
Wet Chemistry by Method 300.0	WG984338	1	06/01/17 14:11	06/01/17 14:11	SAM
Wet Chemistry by Method 300.0	WG984338	50	06/01/17 14:24	06/01/17 14:24	SAM
Wet Chemistry by Method 9056A	WG983563	1	05/26/17 18:08	05/26/17 18:08	SAM
Metals (ICP) by Method 6010B	WG984773	1	06/01/17 16:40	06/01/17 20:02	CCE
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:27	VSS
Volatile Organic Compounds (GC) by Method RSK175	WG984262	1	06/01/17 11:47	06/01/17 11:47	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG985562	1	06/03/17 04:34	06/03/17 04:34	DWR

EGW-MW02 L912079-03 GW

Collected by: M. Skridulis
Collected date/time: 05/25/17 10:00
Received date/time: 05/26/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984714	1	06/02/17 10:40	06/02/17 10:40	MCG
Wet Chemistry by Method 300.0	WG984338	1	06/01/17 14:38	06/01/17 14:38	SAM
Wet Chemistry by Method 300.0	WG984338	50	06/01/17 14:51	06/01/17 14:51	SAM
Wet Chemistry by Method 9056A	WG983563	1	05/26/17 18:22	05/26/17 18:22	SAM
Metals (ICP) by Method 6010B	WG984773	1	06/01/17 16:40	06/01/17 20:05	CCE
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:41	VSS
Volatile Organic Compounds (GC) by Method RSK175	WG984262	1	06/01/17 11:49	06/01/17 11:49	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG985562	1	06/03/17 04:48	06/03/17 04:48	DWR

EGT-MW01 L912079-04 GW

Collected by: M. Skridulis
Collected date/time: 05/25/17 11:10
Received date/time: 05/26/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984714	1	06/02/17 10:57	06/02/17 10:57	MCG
Wet Chemistry by Method 300.0	WG984338	1	06/01/17 15:05	06/01/17 15:05	SAM
Wet Chemistry by Method 300.0	WG984338	50	06/01/17 15:18	06/01/17 15:18	SAM
Wet Chemistry by Method 9056A	WG983563	1	05/26/17 18:51	05/26/17 18:51	SAM
Metals (ICP) by Method 6010B	WG984773	1	06/01/17 16:40	06/01/17 19:35	CCE
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:44	VSS
Volatile Organic Compounds (GC) by Method RSK175	WG984262	1	06/01/17 11:51	06/01/17 11:51	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG985562	1	06/03/17 05:01	06/03/17 05:01	DWR

EGT-MW02 L912079-05 GW

Collected by: M. Skridulis
Collected date/time: 05/25/17 11:30
Received date/time: 05/26/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984714	1	06/02/17 11:06	06/02/17 11:06	MCG
Wet Chemistry by Method 300.0	WG984347	1	05/31/17 15:52	05/31/17 15:52	KCF
Wet Chemistry by Method 300.0	WG984347	50	05/31/17 16:06	05/31/17 16:06	KCF
Wet Chemistry by Method 9056A	WG983563	1	05/26/17 19:20	05/26/17 19:20	SAM
Metals (ICP) by Method 6010B	WG984773	1	06/01/17 16:40	06/01/17 20:08	CCE
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:48	VSS
Volatile Organic Compounds (GC) by Method RSK175	WG984262	1	06/01/17 11:53	06/01/17 11:53	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG985562	1	06/03/17 05:15	06/03/17 05:15	DWR

EGT-MW03 L912079-06 GW

Collected by: M. Skridulis
Collected date/time: 05/25/17 11:40
Received date/time: 05/26/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG984714	1	06/02/17 13:23	06/02/17 13:23	MCG
Wet Chemistry by Method 300.0	WG984347	100	05/31/17 16:35	05/31/17 16:35	KCF
Wet Chemistry by Method 9056A	WG983563	1	05/26/17 19:34	05/26/17 19:34	SAM
Metals (ICP) by Method 6010B	WG984773	1	06/01/17 16:40	06/01/17 20:11	CCE
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:51	VSS
Volatile Organic Compounds (GC) by Method RSK175	WG984262	1	06/01/17 11:55	06/01/17 11:55	AMC
Volatile Organic Compounds (GC/MS) by Method 8260B	WG985562	1	06/03/17 05:28	06/03/17 05:28	DWR

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	305		20.0	1	06/02/2017 10:26	WG984714

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	06/01/2017 13:17	WG984338
Chloride	39.9		1.00	1	06/01/2017 13:17	WG984338
Sulfate	1580		250	50	06/01/2017 13:58	WG984338

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	3.55		0.100	1	05/26/2017 17:53	WG983563
Nitrite as (N)	ND		0.100	1	05/26/2017 17:53	WG983563

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	332		1.00	1	06/01/2017 19:53	WG984773
Iron,Dissolved	ND		0.100	1	06/01/2017 19:53	WG984773
Magnesium,Dissolved	187		1.00	1	06/01/2017 19:53	WG984773
Potassium,Dissolved	5.64		1.00	1	06/01/2017 19:53	WG984773
Sodium,Dissolved	222		1.00	1	06/01/2017 19:53	WG984773

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	5.25		0.0100	1	06/02/2017 15:23	WG985320

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	06/01/2017 11:44	WG984262
Ethane	ND		0.0130	1	06/01/2017 11:44	WG984262
Ethene	ND		0.0130	1	06/01/2017 11:44	WG984262

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	06/03/2017 04:21	WG985562
Toluene	ND		0.00100	1	06/03/2017 04:21	WG985562
Ethylbenzene	ND		0.00100	1	06/03/2017 04:21	WG985562
Total Xylenes	ND		0.00300	1	06/03/2017 04:21	WG985562
(S) Toluene-d8	*100*		*80.0-120*		*06/03/2017 04:21*	WG985562
(S) Dibromofluoromethane	*92.7*		*76.0-123*		*06/03/2017 04:21*	WG985562
(S) a,a,a-Trifluorotoluene	*95.2*		*80.0-120*		*06/03/2017 04:21*	WG985562
(S) 4-Bromofluorobenzene	*108*		*80.0-120*		*06/03/2017 04:21*	WG985562

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	299		20.0	1	06/02/2017 10:33	WG984714

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	06/01/2017 14:11	WG984338
Chloride	36.9		1.00	1	06/01/2017 14:11	WG984338
Sulfate	1430		250	50	06/01/2017 14:24	WG984338

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	1.98		0.100	1	05/26/2017 18:08	WG983563
Nitrite as (N)	ND		0.100	1	05/26/2017 18:08	WG983563

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	273		1.00	1	06/01/2017 20:02	WG984773
Iron,Dissolved	ND		0.100	1	06/01/2017 20:02	WG984773
Magnesium,Dissolved	166		1.00	1	06/01/2017 20:02	WG984773
Potassium,Dissolved	9.72		1.00	1	06/01/2017 20:02	WG984773
Sodium,Dissolved	210		1.00	1	06/01/2017 20:02	WG984773

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	4.37		0.0100	1	06/02/2017 15:27	WG985320

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	06/01/2017 11:47	WG984262
Ethane	ND		0.0130	1	06/01/2017 11:47	WG984262
Ethene	ND		0.0130	1	06/01/2017 11:47	WG984262

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	06/03/2017 04:34	WG985562
Toluene	ND		0.00100	1	06/03/2017 04:34	WG985562
Ethylbenzene	ND		0.00100	1	06/03/2017 04:34	WG985562
Total Xylenes	ND		0.00300	1	06/03/2017 04:34	WG985562
(S) Toluene-d8	*101*		*80.0-120*		*06/03/2017 04:34*	WG985562
(S) Dibromofluoromethane	*91.0*		*76.0-123*		*06/03/2017 04:34*	WG985562
(S) a,a,a-Trifluorotoluene	*95.6*		*80.0-120*		*06/03/2017 04:34*	WG985562
(S) 4-Bromofluorobenzene	*108*		*80.0-120*		*06/03/2017 04:34*	WG985562

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	280		20.0	1	06/02/2017 10:40	WG984714

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	06/01/2017 14:38	WG984338
Chloride	38.7		1.00	1	06/01/2017 14:38	WG984338
Sulfate	863		250	50	06/01/2017 14:51	WG984338

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	0.685		0.100	1	05/26/2017 18:22	WG983563
Nitrite as (N)	ND		0.100	1	05/26/2017 18:22	WG983563

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	167		1.00	1	06/01/2017 20:05	WG984773
Iron,Dissolved	ND		0.100	1	06/01/2017 20:05	WG984773
Magnesium,Dissolved	130		1.00	1	06/01/2017 20:05	WG984773
Potassium,Dissolved	7.94		1.00	1	06/01/2017 20:05	WG984773
Sodium,Dissolved	179		1.00	1	06/01/2017 20:05	WG984773

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	4.03		0.0100	1	06/02/2017 15:41	WG985320

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	06/01/2017 11:49	WG984262
Ethane	ND		0.0130	1	06/01/2017 11:49	WG984262
Ethene	ND		0.0130	1	06/01/2017 11:49	WG984262

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	06/03/2017 04:48	WG985562
Toluene	ND		0.00100	1	06/03/2017 04:48	WG985562
Ethylbenzene	ND		0.00100	1	06/03/2017 04:48	WG985562
Total Xylenes	ND		0.00300	1	06/03/2017 04:48	WG985562
(S) Toluene-d8	*101*		*80.0-120*		*06/03/2017 04:48*	WG985562
(S) Dibromofluoromethane	*91.3*		*76.0-123*		*06/03/2017 04:48*	WG985562
(S) a,a,a-Trifluorotoluene	*96.7*		*80.0-120*		*06/03/2017 04:48*	WG985562
(S) 4-Bromofluorobenzene	*108*		*80.0-120*		*06/03/2017 04:48*	WG985562

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	277		20.0	1	06/02/2017 10:57	WG984714

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		1.00	1	06/01/2017 15:05	WG984338
Chloride	90.6		1.00	1	06/01/2017 15:05	WG984338
Sulfate	1930		250	50	06/01/2017 15:18	WG984338

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		0.100	1	05/26/2017 18:51	WG983563
Nitrite as (N)	ND		0.100	1	05/26/2017 18:51	WG983563

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	217	V	1.00	1	06/01/2017 19:35	WG984773
Iron,Dissolved	ND		0.100	1	06/01/2017 19:35	WG984773
Magnesium,Dissolved	140	V	1.00	1	06/01/2017 19:35	WG984773
Potassium,Dissolved	4.40		1.00	1	06/01/2017 19:35	WG984773
Sodium,Dissolved	616	V	1.00	1	06/01/2017 19:35	WG984773

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	2.93		0.0100	1	06/02/2017 15:44	WG985320

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	06/01/2017 11:51	WG984262
Ethane	ND		0.0130	1	06/01/2017 11:51	WG984262
Ethene	ND		0.0130	1	06/01/2017 11:51	WG984262

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	06/03/2017 05:01	WG985562
Toluene	ND		0.00100	1	06/03/2017 05:01	WG985562
Ethylbenzene	ND		0.00100	1	06/03/2017 05:01	WG985562
Total Xylenes	ND		0.00300	1	06/03/2017 05:01	WG985562
(S) Toluene-d8	*100*		*80.0-120*		*06/03/2017 05:01*	WG985562
(S) Dibromofluoromethane	*91.2*		*76.0-123*		*06/03/2017 05:01*	WG985562
(S) a,a,a-Trifluorotoluene	*95.6*		*80.0-120*		*06/03/2017 05:01*	WG985562
(S) 4-Bromofluorobenzene	*109*		*80.0-120*		*06/03/2017 05:01*	WG985562

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Alkalinity	250		20.0	1	06/02/2017 11:06	WG984714

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Bromide	ND		50.0	50	05/31/2017 16:06	WG984347
Chloride	83.9		1.00	1	05/31/2017 15:52	WG984347
Sulfate	2960		250	50	05/31/2017 16:06	WG984347

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Nitrate as (N)	0.575		0.100	1	05/26/2017 19:20	WG983563
Nitrite as (N)	ND		0.100	1	05/26/2017 19:20	WG983563

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Calcium,Dissolved	399		1.00	1	06/01/2017 20:08	WG984773
Iron,Dissolved	ND		0.100	1	06/01/2017 20:08	WG984773
Magnesium,Dissolved	331		1.00	1	06/01/2017 20:08	WG984773
Potassium,Dissolved	7.58		1.00	1	06/01/2017 20:08	WG984773
Sodium,Dissolved	462		1.00	1	06/01/2017 20:08	WG984773

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Strontium	7.78		0.0100	1	06/02/2017 15:48	WG985320

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Methane	ND		0.0100	1	06/01/2017 11:53	WG984262
Ethane	ND		0.0130	1	06/01/2017 11:53	WG984262
Ethene	ND		0.0130	1	06/01/2017 11:53	WG984262

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date/time	
Benzene	ND		0.00100	1	06/03/2017 05:15	WG985562
Toluene	ND		0.00100	1	06/03/2017 05:15	WG985562
Ethylbenzene	ND		0.00100	1	06/03/2017 05:15	WG985562
Total Xylenes	ND		0.00300	1	06/03/2017 05:15	WG985562
(S) Toluene-d8	*99.6*		*80.0-120*		*06/03/2017 05:15*	WG985562
(S) Dibromofluoromethane	*91.1*		*76.0-123*		*06/03/2017 05:15*	WG985562
(S) a,a,a-Trifluorotoluene	*94.6*		*80.0-120*		*06/03/2017 05:15*	WG985562
(S) 4-Bromofluorobenzene	*108*		*80.0-120*		*06/03/2017 05:15*	WG985562

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Alkalinity	ND		20.0	1	06/02/2017 13:23	WG984714

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Bromide	ND		100	100	05/31/2017 16:35	WG984347
Chloride	166		100	100	05/31/2017 16:35	WG984347
Sulfate	5610		500	100	05/31/2017 16:35	WG984347

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Nitrate as (N)	ND		0.100	1	05/26/2017 19:34	WG983563
Nitrite as (N)	ND		0.100	1	05/26/2017 19:34	WG983563

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Calcium,Dissolved	432		1.00	1	06/01/2017 20:11	WG984773
Iron,Dissolved	0.282		0.100	1	06/01/2017 20:11	WG984773
Magnesium,Dissolved	616		1.00	1	06/01/2017 20:11	WG984773
Potassium,Dissolved	6.34		1.00	1	06/01/2017 20:11	WG984773
Sodium,Dissolved	824		1.00	1	06/01/2017 20:11	WG984773

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Strontium	7.73		0.0100	1	06/02/2017 15:51	WG985320

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Methane	ND		0.0100	1	06/01/2017 11:55	WG984262
Ethane	ND		0.0130	1	06/01/2017 11:55	WG984262
Ethene	ND		0.0130	1	06/01/2017 11:55	WG984262

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date/time	Batch
Benzene	ND		0.00100	1	06/03/2017 05:28	WG985562
Toluene	ND		0.00100	1	06/03/2017 05:28	WG985562
Ethylbenzene	ND		0.00100	1	06/03/2017 05:28	WG985562
Total Xylenes	ND		0.00300	1	06/03/2017 05:28	WG985562
(S) Toluene-d8	*101*		*80.0-120*		*06/03/2017 05:28*	WG985562
(S) Dibromofluoromethane	*92.2*		*76.0-123*		*06/03/2017 05:28*	WG985562
(S) a,a,a-Trifluorotoluene	*96.0*		*80.0-120*		*06/03/2017 05:28*	WG985562
(S) 4-Bromofluorobenzene	*108*		*80.0-120*		*06/03/2017 05:28*	WG985562

Method Blank (MB)

(MB) R3222768-1 06/02/17 09:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Alkalinity	3.14	J	2.71	20.0

L912974-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912974-01 06/02/17 09:39 • (DUP) R3222768-3 06/02/17 09:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	1590	1670	1	5.00		20

L912096-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912096-01 06/02/17 11:59 • (DUP) R3222768-7 06/02/17 12:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	136	137	1	1.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222768-4 06/02/17 10:47 • (LCSD) R3222768-8 06/02/17 12:19

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Alkalinity	100	107	103	107	103	85.0-115			4.00	20

Method Blank (MB)

(MB) R3222715-1 06/01/17 06:57

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.079	1.00
Chloride	U		0.0519	1.00
Sulfate	U		0.0774	5.00

L912065-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912065-01 06/01/17 12:50 • (DUP) R3222715-4 06/01/17 13:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	0.000	5	0		20
Chloride	117	117	5	0		20
Sulfate	46.6	47.8	5	3		20

L911570-04 Original Sample (OS) • Duplicate (DUP)

(OS) L911570-04 06/01/17 09:43 • (DUP) R3222715-8 06/01/17 17:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	0.000	1	0		20
Chloride	8.67	8.71	1	0		20
Sulfate	ND	2.62	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222715-2 06/01/17 07:10 • (LCSD) R3222715-3 06/01/17 07:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Bromide	40.0	40.0	40.1	100	100	90-110			0	20
Chloride	40.0	40.0	40.0	100	100	90-110			0	20
Sulfate	40.0	40.1	40.2	100	100	90-110			0	20

L912071-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L912071-01 06/01/17 15:32 • (MS) R3222715-5 06/01/17 15:45

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Bromide	50.0	ND	51.1	102	1	80-120	
Chloride	50.0	18.9	71.2	105	1	80-120	

L912071-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L912071-01 06/01/17 15:32 • (MS) R3222715-5 06/01/17 15:45

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Sulfate	50.0	10.2	63.6	107	1	80-120	

L912073-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912073-01 06/01/17 16:25 • (MS) R3222715-6 06/01/17 16:39 • (MSD) R3222715-7 06/01/17 16:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	ND	48.4	51.2	97	102	1	80-120			6	20
Chloride	50.0	3.48	53.4	55.0	100	103	1	80-120			3	20
Sulfate	50.0	19.9	70.6	72.4	102	105	1	80-120			2	20

Method Blank (MB)

(MB) R3222381-1 05/31/17 06:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.079	1.00
Chloride	U		0.0519	1.00
Sulfate	U		0.0774	5.00

L912085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912085-01 05/31/17 17:04 • (DUP) R3222381-4 05/31/17 17:18

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	10	0		20
Chloride	328	328	10	0		20
Sulfate	ND	39.0	10	0		20

L912156-03 Original Sample (OS) • Duplicate (DUP)

(OS) L912156-03 05/31/17 23:47 • (DUP) R3222381-8 06/01/17 00:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.327	1	0		20
Chloride	42.8	42.8	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222381-2 05/31/17 07:13 • (LCSD) R3222381-3 05/31/17 07:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromide	40.0	40.0	40.0	100	100	90-110			0	20
Chloride	40.0	39.6	39.7	99	99	90-110			0	20
Sulfate	40.0	40.1	40.1	100	100	90-110			0	20

L912097-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L912097-14 05/31/17 18:30 • (MS) R3222381-5 05/31/17 18:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	ND	28.9	58	1	80-120	J6
Chloride	50.0	50.6	98.5	96	1	80-120	

L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 05/31/17 21:09 • (MS) R3222381-6 05/31/17 21:23 • (MSD) R3222381-7 05/31/17 21:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	ND	46.7	46.4	93	93	1	80-120			1	20
Chloride	50.0	9.54	60.3	60.8	101	102	1	80-120			1	20

Method Blank (MB)

(MB) R3221471-1 05/26/17 06:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100

L912079-03 Original Sample (OS) • Duplicate (DUP)

(OS) L912079-03 05/26/17 18:22 • (DUP) R3221471-4 05/26/17 18:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	0.685	0.692	1	1		15
Nitrite	ND	0.000	1	0		15

L912095-04 Original Sample (OS) • Duplicate (DUP)

(OS) L912095-04 05/26/17 21:15 • (DUP) R3221471-6 05/26/17 21:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	5.80	5.81	1	0		15
Nitrite	ND	0.000	1	0		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3221471-2 05/26/17 07:13 • (LCSD) R3221471-3 05/26/17 07:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Nitrate	8.00	8.21	8.24	103	103	80-120			0	15
Nitrite	8.00	8.08	8.08	101	101	80-120			0	15

L912079-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L912079-04 05/26/17 18:51 • (MS) R3221471-5 05/26/17 19:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate	5.00	ND	5.12	102	1	80-120	
Nitrite	5.00	ND	5.44	109	1	80-120	

L912095-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912095-07 05/26/17 22:13 • (MS) R3221471-7 05/26/17 23:11 • (MSD) R3221471-8 05/26/17 23:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate	5.00	2.90	7.86	8.03	99	102	1	80-120			2	15
Nitrite	5.00	ND	5.02	5.08	100	101	1	80-120			1	15

Method Blank (MB)

(MB) R3222641-1 06/01/17 19:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium,Dissolved	U		0.0463	1.00
Iron,Dissolved	U		0.0141	0.100
Magnesium,Dissolved	0.0205	J	0.0111	1.00
Potassium,Dissolved	U		0.102	1.00
Sodium,Dissolved	U		0.0985	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222641-2 06/01/17 19:30 • (LCSD) R3222641-3 06/01/17 19:32

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	10.0	9.91	10.2	99	102	80-120			2	20
Iron,Dissolved	10.0	9.86	10.2	99	102	80-120			3	20
Magnesium,Dissolved	10.0	9.97	10.1	100	101	80-120			2	20
Potassium,Dissolved	10.0	9.66	9.88	97	99	80-120			2	20
Sodium,Dissolved	10.0	10.1	10.3	101	103	80-120			2	20

L912079-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912079-04 06/01/17 19:35 • (MS) R3222641-5 06/01/17 19:41 • (MSD) R3222641-6 06/01/17 19:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	10.0	217	220	222	36	55	1	75-125	V	V	1	20
Iron,Dissolved	10.0	ND	10.1	10.0	101	100	1	75-125			1	20
Magnesium,Dissolved	10.0	140	147	148	66	80	1	75-125	V		1	20
Potassium,Dissolved	10.0	4.40	15.1	15.1	107	107	1	75-125			0	20
Sodium,Dissolved	10.0	616	610	614	0	0	1	75-125	V	V	1	20

Method Blank (MB)

(MB) R3222997-1 06/02/17 14:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Strontium	0.000223	J	0.00016	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222997-2 06/02/17 15:02 • (LCSD) R3222997-3 06/02/17 15:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Strontium	0.0500	0.0464	0.0471	93	94	80-120			2	20

L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 06/02/17 15:09 • (MS) R3222997-5 06/02/17 15:16 • (MSD) R3222997-6 06/02/17 15:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Strontium	0.0500	0.840	0.883	0.867	86	53	1	75-125		V	2	20

L912167-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912167-02 06/02/17 16:37 • (MS) R3222997-7 06/02/17 16:41 • (MSD) R3222997-8 06/02/17 16:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Strontium	0.0500	0.899	0.939	0.939	79	79	1	75-125			0	20

Method Blank (MB)

(MB) R3222529-1 06/01/17 11:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L912079-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912079-01 06/01/17 11:44 • (DUP) R3222529-2 06/01/17 12:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L912451-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912451-01 06/01/17 12:21 • (DUP) R3222529-3 06/01/17 15:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222529-4 06/01/17 15:39 • (LCSD) R3222529-5 06/01/17 15:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Methane	0.0678	0.0770	0.0709	114	105	85.0-115			8.25	20
Ethane	0.129	0.122	0.127	94.3	98.8	85.0-115			4.68	20
Ethene	0.127	0.117	0.122	91.8	95.7	85.0-115			4.25	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3222974-3 06/03/17 00:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*101*			*80.0-120*
(S) Dibromofluoromethane	*91.5*			*76.0-123*
(S) a,a,a-Trifluorotoluene	*95.7*			*80.0-120*
(S) 4-Bromofluorobenzene	*108*			*80.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3222974-1 06/02/17 23:23 • (LCSD) R3222974-2 06/02/17 23:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0238	0.0234	95.0	93.5	69.0-123			1.63	20
Ethylbenzene	0.0250	0.0249	0.0254	99.6	101	77.0-120			1.91	20
Toluene	0.0250	0.0253	0.0253	101	101	77.0-120			0.130	20
Xylenes, Total	0.0750	0.0754	0.0758	101	101	77.0-120			0.530	20
(S) Toluene-d8				*103*	*104*	*80.0-120*				
(S) Dibromofluoromethane				*98.1*	*95.9*	*76.0-123*				
(S) a,a,a-Trifluorotoluene				*95.4*	*94.3*	*80.0-120*				
(S) 4-Bromofluorobenzene				*103*	*104*	*80.0-120*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

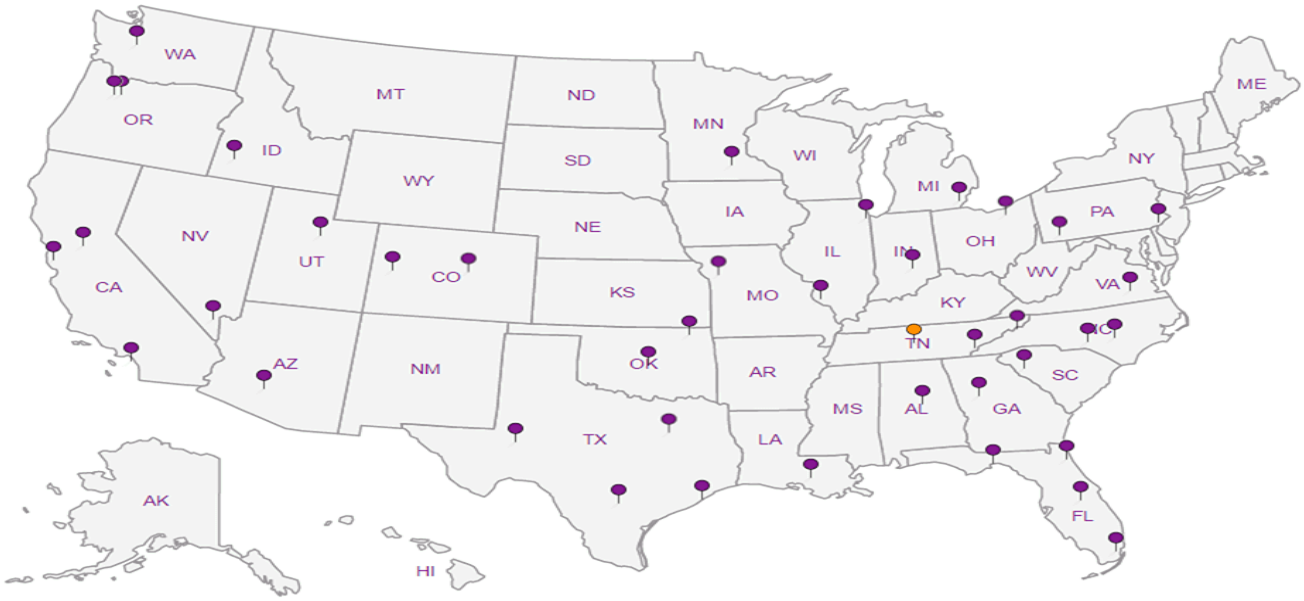
Third Party & Federal Accreditations

A2LA-ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA-ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



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Terracon Consultants, Inc - Longmont, CO

1242 Bramwood Place

Mia Pa•lll
1242 Bramwood Place
Longmont, CO 80501

Report co:
Mike Skridulis

EmaJI To: mUcskridufJstttemKOn.com

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Phone: 303•454 5249

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Analysis / Container / Preservative

Pres Chk

Chain of Custody Page 1 of 1

ESC LAB SCIENCES

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

GW - Groundwater
WW - WasteWater
DW - Drinking Water
OT - Other

Samples returned via: UPS FedEx Courier

Trip Blank Received

Relinquished by : (Signature)

Time:

Received by: (Signature)

MeoH

Relinquished by : (Signature)

Received by: (Signature)

If preservation required by Login: Date/Time

Collected by (print): M. Skridulis

Relinquished by : (Signature)

Date:

Time:

Received for lab by: (Signature)

Hold

Condition

NCF / OK

Sample ID	
EGW-MW01	G
EGW-MW03	
EGW-MW02	
EGT-MW01	
EGT-MW02	
EGT-MW03	

-03
-04
-05
-06

Receipt Check

NP Y Y Y Y Y Y Y

Date: 5/25/17

Date:

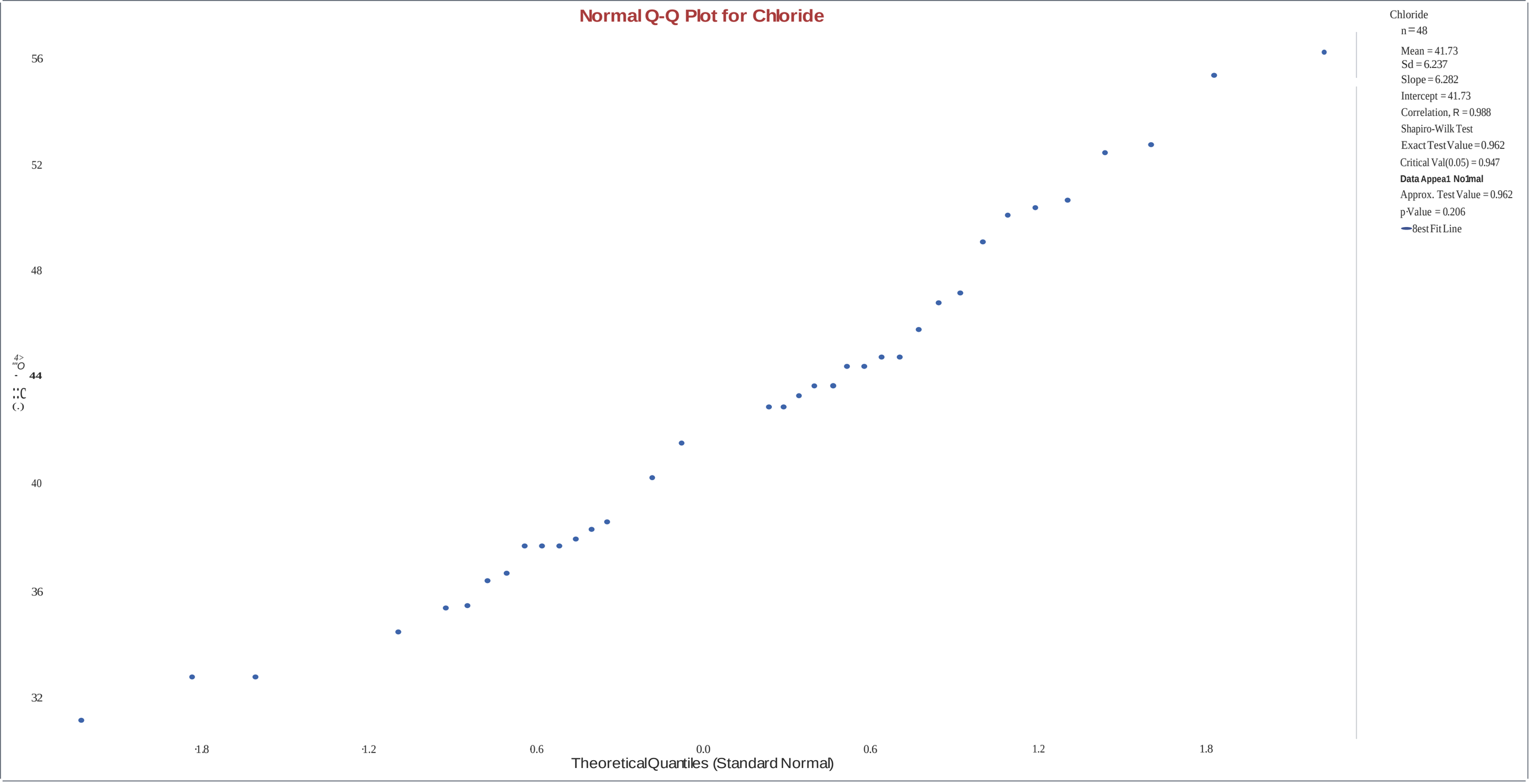
Temp: 2.1 °C

Bottles Received: TOL 42

Date: 5/26/17

Time: 0845

APPENDIX C
PROUCL STATISTICAL ANALYSIS OUTPUTS


Normal Q-Q Plot for Chloride
Chloride
n = 48
Mean = 41.73
Sd = 6.237
Slope = 6.282
Intercept = 41.73
Correlation, R = 0.988
Shapiro-Wilk Test
Exact Test Value = 0.962
Critical Val(0.05) = 0.947
Data Appea1 No1mal
Approx. Test Value = 0.962
p-Value = 0.206
8est Fit Line
56
52
48
44
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32
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·1.2
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0.0
0.6
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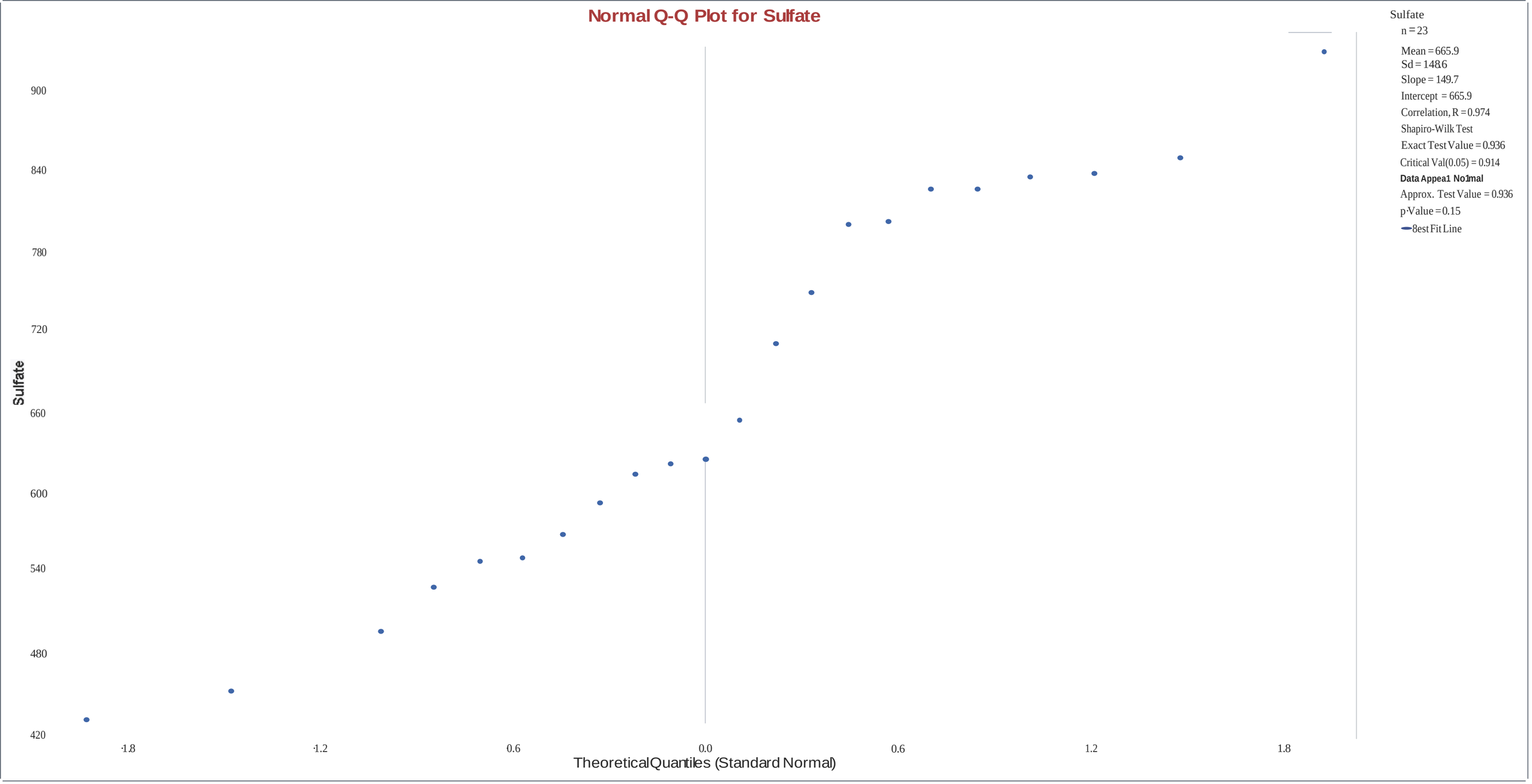
Theoretical Quantiles (Standard Normal)


Normal Q-Q Plot for Sulfate
Sulfate
n = 23
Mean = 665.9
Sd = 148.6
Slope = 149.7
Intercept = 665.9
Correlation, R = 0.974
Shapiro-Wilk Test
Exact Test Value = 0.936
Critical Val(0.05) = 0.914
Data Appea1 No1mal
Approx. Test Value = 0.936
p-Value = 0.15
8est Fit Line
Sulfate
900
840
780
720
660
600
540
480
420
-1.8
-1.2
0.6
0.0
0.6
1.2
1.8
Theoretical Quantiles (Standard Normal)