



## **SITE CHRONOLOGY AND STATUS UPDATE**

**LATTION PIT (AP-23)  
INCIDENT NO. NAUTOFAB000337  
UNIT O, SECTION 23, TOWNSHIP 18S, RANGE 26E  
EDDY COUNTY, NEW MEXICO  
32.729187, -104.349760  
RANGER REFERENCE NO. 5375**

### **PREPARED FOR:**

**EOG RESOURCES, INC.  
ARTESIA DIVISION  
105 S 4TH STREET  
ARTESIA, NEW MEXICO 88210**

### **PREPARED BY:**

**RANGER ENVIRONMENTAL SERVICES, LLC  
P.O. BOX 201179  
AUSTIN, TEXAS 78720**

**AUGUST 14, 2023**

A blue ink signature of Patrick K. Finn, consisting of a stylized 'P' followed by a horizontal line.

**Patrick K. Finn, P.G. (TX)  
Project Geoscientist**

A blue ink signature of William Kierdorf, consisting of a stylized 'W' followed by several loops.

**William Kierdorf, REM  
Project Manager**

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**1.0 SITE LOCATION AND BACKGROUND**

The Lattion Pit (Site) is a historic oil and gas production pit formerly located at the Lattion Battery facility and former Lattion #1 well pad, an oil and gas production facility located on private land, approximately 8.25 miles south-southwest of Artesia, within Eddy County, New Mexico. The facility is situated in Unit O, Section 23, T18S-R26E at GPS coordinates 32.729187, -104.349760. The Lattion Battery is currently active and is being operated by Silverback Operating II (Silverback). Based on the site history and transaction history, EOG Resources, Inc. (EOG) maintains environmental responsibility for the impacts to native media at the Site.

The Lattion #1 well and Lattion Battery were historically operated by H&S Oil Company (H&S) and two unlined earthen pits were formerly utilized by H&S as oil and gas fluid storage/impoundment facilities. In 1997, Yates Petroleum Corporation (Yates) acquired the Lattion #1 well and Lattion Battery and associated pits from H&S. While operated by Yates, the two pits underwent closure and assessment of the former pit locations was conducted. In September 2016, EOG acquired Yates and its associated assets including the Lattion #1 well and Lattion Battery which included the subject Lattion Pit. The Lattion #1 well was subsequently plugged and abandoned by Silverback in March 2023.

The pit closures and assessment activities completed by Yates documented impacts to the native soil. Groundwater impacts were also documented at the site in the 2002 timeframe. The greatest impacts were observed upgradient of the former pit locations and as such the groundwater impacts were not believed to have been caused by the former pit operations and were instead thought to be possibly the result of irrigation seepage from the irrigated fields to the north of the site.

Due to the documented conditions at the Site, coordination with the New Mexico Oil and Gas Division (NMOCD) was initiated. Communication and coordination between the NMOCD and Yates continued until 2005 when a Stage I & II Abatement Plan was submitted to the NMOCD. Based on available information, no response was ever received from the NMOCD regarding this plan. During the 2005 to 2022 timeframe, a total of 13 groundwater monitoring events were conducted at the Site. In August 2020 and May 2021, additional soil investigation activities were completed at the Site.

EOG has engaged Ranger Environmental Services, LLC (Ranger) to assist in the continuation of the assessment and remediation efforts at the Site as well as to re-establish communications with the NMOCD regarding the Site. In May 2023, Ranger personnel established communications

with the NMOCD, and began discussion of the Site and the steps needed to bring the Site into compliance with the current regulatory criteria and New Mexico Administrative Code (NMAC). Based on Ranger's communications with the NMOCD, the following *Site Chronology and Status Update* has been prepared to provide the NMOCD with a summary of the Site history and the cumulative soil and groundwater data so that a regulatory path forward can be established.

A *Topographic Map* and *Area Map* noting the location of the subject Site and surrounding areas are attached. A *Site Map* depicting the pertinent site features is also attached.

## **2.0 SITE CHRONOLOGY (1998 – 2005)**

Below is a chronology of the activities undertaken at the Site during the timeframe of 1998 through 2005. The information presented below is derived from the proposals, work plans, and other correspondence available to Ranger. All information presented in this section is available via the NMOCD online imaging portal (<https://ocdimage.emnrd.nm.gov/imaging/>).

### **2.1 Yates Acquisition and Pit Closure (1997 – 2000)**

As previously stated, Yates acquired the Lattion Battery and subject Lattion Pits from H&S in 1997. At the time of the acquisition, the subject pits remained open. The larger pit (eastern pit) had dimensions of approximately 100 feet by 115 feet and the smaller (western pit) had dimensions of approximately 45 feet by 50 feet. The two pits were noted to be of earthen construction with no liner present. Under Yates' direction, an undated "*Pit Closure*" proposal was submitted to the NMOCD. In June 1998, the NMOCD approved of the proposed closure activities, with conditions of approval that included the vertical delineation of the soil conditions at the Site and directives for sample analysis.

In May 1998, Bioremediation Contractors & Consultants, Inc. (BCC) initiated closure of the pits. The activities completed by BCC included the removal of bird netting, debris, and fluids within the pit location. The pit was then ripped, tilled, sprayed with a BCC microbial product, treated with nutrients, and was then managed to assist in the bioremedial process. Soil samples were collected in September 1999 and January 2000 and the pit was subsequently backfilled.

In February 2000, a closure report/request was submitted to the NMOCD. In August 2000, the NMOCD denied the closure request citing lack of pertinent closure details, inadequate soil sampling, and lack of soil chloride analyses.

### **2.2 Additional Assessment Activities and Stage I & II Abatement Plans (2000 – 2005)**

In October 2000, Yates contracted Environmental Technology Group, Inc. (ETGI) to perform additional soil delineation activities at the Site. On October 20, 2000, ETGI and a drilling subcontractor installed six soil borings at the Site, two in the western pit (SB-1 and SB-2) and four in the eastern pit (SB's 3-6). During the installation process, multiple soil samples and a groundwater sample (from boring SB-2) were collected for laboratory analysis. Additionally, a background soil sample was collected from a location outside of the apparent impacted areas at the Site. Elevated soil chloride concentrations were documented to be present in the six soil borings completed in the vicinity of the historic pit locations.

The groundwater sample collected from soil boring SB-2 was documented to contain elevated chloride concentrations. However, since this groundwater sample appeared to have been



collected from an open soil boring subject to sloughing effects from overlying soils, these results may or may not have been representative of the actual groundwater quality.

The findings of the October 2000 site assessment activities were documented in the ETGI-prepared *Preliminary Site Investigation Report* dated November 2000. In December 2000, Yates submitted the ETGI report and previous BCC report to the NMOCD and petitioned for closure of the Site. On March 7, 2001, the NMOCD denied site closure due to the fact that the groundwater contained chloride concentrations in excess of the New Mexico Water Quality Commission (WQCC) standards. The NMOCD directed that an abatement plan for the site be prepared and submitted to the NMOCD.

In July 2001, a *Stage 1 Abatement Plan Proposal* prepared by Harding ESE (Harding) was submitted to the NMOCD. The proposal included provisions for the installation and sampling of three soil borings and the conversion of the soil borings into permanent monitor wells to allow for the collection of representative groundwater samples for laboratory analysis. On September 25, 2001, the NMOCD responded to the proposal with the statement that the plans were “*administratively complete*” and that prior to the NMOCD review of the proposed activities public notification was to be completed.

On October 19, 2001, Yates submitted documentation of the required public notification to the NMOCD with the request that the Harding-prepared *Stage 1 Abatement Plan Proposal* be reviewed. On February 1, 2002, the NMOCD granted approval of the proposed activities with conditions of approval including the requirement that a Stage I Investigation report be submitted to the NMOCD by April 1, 2002. Due to various reasons, including the transfer of the project from Harding back to ETGI, multiple project timeline extension requests were submitted and approved by the NMOCD.

A June 2003 ETGI-prepared *Preliminary Site Investigation Report* documenting the installation and sampling of four monitor wells (MW's 1-4) was subsequently submitted to the NMOCD. The information provided in the report confirmed that impacts to soil and groundwater were present at the Site. Monitor well MW-4 was installed in the approximate center of the pit area. The MW-4 soil analytical data documented an elevated chloride concentration of 2,390 mg/Kg at a depth of 20' bgs which subsequently declined to 213 mg/Kg by a depth of 45 feet where groundwater was encountered thus potentially indicating that the historic pit operations had not affected the underlying groundwater. No soil chloride impacts were documented in MW's 1-3, and none of the soil samples collected from the site were found to contain detectable BTEX or TPH concentrations.

Groundwater samples collected from the installed monitor wells were also documented to contain nondetectable BTEX concentrations. However, groundwater chloride concentrations were documented to be elevated beyond the applicable WQCC standards. Within the report ETGI highlighted that the groundwater sample exhibiting the highest chloride concentration was collected from monitor well MW-1, located upgradient of the former pit location, and that the groundwater sample exhibiting the lowest chloride concentration was collected from monitor well MW-3, located downgradient of the former pit location. Based on this information, ETGI concluded that the former pit area did not appear to be adversely impacting groundwater in the site area. The June 2003 ETGI report proposed that a formal pit closure report be prepared and that the installed monitor wells be plugged and abandoned upon NMOCD approval.

Based on the information presented in the June 2003 ETGI report, the NMOCD issued a response dated October 6, 2004. The NMOCD response stated that the extent of the groundwater impacts at the Site had not been delineated and requested that a groundwater delineation work plan be submitted by December 31, 2004. Prior to the submittal of the NMOCD-directed plan, ETGI was replaced by Safety & Environmental Solutions, Inc. (SESI) who had been retained by Yates to conduct the further site investigative activities. During the transfer of the project from ETGI to SESI, a 45-day extension request was submitted and approved by the NMOCD to allow for the project transition.

In February 2005, an SESI-prepared *Amended Stage 1 Abatement Plan Proposal*, dated February 15, 2005, was submitted to the NMOCD. The amended plan included SESI's review of the previously collected Site data and conditions and proposed additional site investigation activities. The proposed site activities included the resurveying of the existing monitor wells and the installation of a background monitor well in an undisturbed area located upgradient from the former pit areas. The plan also proposed the plugging of monitor well MW-4 located within the footprint of the historic pit and continued groundwater monitoring activities.

On July 18, 2005, the NMOCD responded to SESI's *Amended Stage 1 Abatement Plan Proposal* and denied the proposed activities. The NMOCD response cited a lack of adequate characterization of the impacts at the Site, and insufficient proposed delineation locations. The NMOCD requested submittal of a revised Stage 1 Abatement Plan by August 19, 2005.

As requested by the NMOCD, an *Amended Stage 1 Abatement Plan Proposal*, prepared by SESI and dated August 19, 2005, was subsequently submitted to the NMOCD. The updated plan revisited the information presented in the February 15, 2005 version and proposed additional site activities to address the NMOCD concerns and requests. The plan proposed four soil borings, with the possibility for additional borings, to be installed within the former pit area to assist in the characterization/delineation of the soil impacts. The plan also included provisions for the installation of a minimum of two additional monitor wells. Additional proposed activities included the determination of hydraulic conductivity and transmissivity via groundwater slug tests and the continued monitoring and sampling of the Site monitor wells.

Based on available information, it does not appear that the NMOCD ever replied to SESI's August 19, 2005 *Amended Stage 1 Abatement Plan Proposal*. The final correspondence available via the NMOCD online resources is noted to be a cover letter that appears to have been submitted with the August 19, 2005 amended plan. EOG also conducted an internal review of the project files transferred to them by Yates and an NMOCD response to the August 19, 2005 plan was not discovered.

### **3.0 GROUNDWATER MONITORING AND SITE ASSESSMENT (2005-PRESENT)**

#### **3.1 Groundwater Monitoring**

Between 2005 and 2022, a total of 13 groundwater monitoring events were conducted at the Site. The site monitoring wells were gauged and sampled during each event. Ranger has compiled and attached cumulative tables of the Site well gauging and groundwater analytical data. As presented in the attached tables, and as summarized below, no light nonaqueous phase liquid (LNAPL) has been detected in the site monitoring wells to date and no elevated concentrations of BTEX or TPH have been documented. The groundwater analytical data has continued to indicate the presence of elevated chloride, sulfate and TDS concentrations, in exceedance of the



applicable WQCC standards, from an apparent source located upgradient of the former pit locations. Below is a brief summary of the groundwater monitoring results to date.

### Well Gauging

As summarized above, no LNAPL has been documented to be present in the site monitoring wells. The depths to groundwater in the site monitoring wells since 2005 have ranged from a minimum of approximately 44.21 feet below top of casing (btoc) in MW-1 to a maximum of approximately 62.22 feet btoc in MW-3. As illustrated on the attached groundwater gradient maps, the site groundwater flow direction has been documented to consistently flow in a south-southeasterly direction with gradients ranging from approximately 0.03 – 0.1 ft/ft.

### Groundwater Anions

Concentrations of chloride above the NMAC 20.6.2.3103 criteria have been documented in three of the four site monitoring wells (MW-1, MW-2 & MW-4). The groundwater chloride data continue to suggest an upgradient off-site source unrelated to the former pit operations. Monitor well MW-1, located upgradient of the former pit locations, has consistently been found to contain the highest site chloride concentrations and monitor well MW-3, located downgradient of the pit, appears unaffected with chloride concentrations well below the 20.6.2.3103 NMAC criteria.

Concentrations of sulfate above the NMAC 20.6.2.3103 criteria were documented in all four of the site monitoring wells and, similar to the chloride data described above, the groundwater sulfate data are also suggestive of an upgradient off-site source, as well as elevated background sulfate concentrations (based upon the elevated sulfate concentrations in monitor well MW-3 which appears to be an unaffected well).

Relatively minor detections of fluoride above the NMAC 20.6.2.3103 criteria were also documented during multiple sampling events in MW-1 and MW-4, as well as one event in MW-3. The fluoride concentrations in the wells are all relatively similar suggesting potential background conditions.

### Dissolved Metals

Based upon available information, groundwater dissolved metals analyses were initiated at the site during the March 2012 sampling event. Exceedances of the NMAC 20.6.2.3103 criteria for manganese were documented in samples collected during six events in MW-1 and from one event in MW-3. Exceedances of the NMAC criteria for iron were documented in one sample collected from MW-1 during the March 21, 2022 sampling event. All exceedances were relatively minor and could potentially be associated with background conditions, although the multiple manganese detections in upgradient monitor well MW-1, which is the most affected site monitoring well, potentially suggest that these detections may be associated with the upgradient source for the groundwater impact.

### VOCs

No VOCs have been detected in the site monitoring wells to date. The absence of any VOCs (such as BTEX) in the groundwater provides additional documentation suggesting that the former pit operations did not adversely affect the groundwater. Write

### Specific Conductance, pH, Alkalinity, and TDS

Concentrations of TDS above the NMAC 20.6.2.3103 criteria were documented in all four of the site monitoring wells and, similar to the chloride data described above, the groundwater TDS data are also suggestive of an upgradient off-site source.

### Isoconcentration Maps

Attached are isoconcentration maps for varying sampling dates between 2002 and 2022 for the primary groundwater constituents of concern (COCs) at the Site, including chloride, sulfate and TDS. As illustrated on these maps, the overall most affected site monitoring well is upgradient monitor well MW-1, located to the northwest and up gradient of the former pits. The least affected well is downgradient monitor well MW-3, located to the southeast (downgradient) of the former pits.

In the August 2005 *Amended Stage 1 Abatement Plan*, it was noted that the elevated chloride and TDS concentrations were suspected to be potentially related to the irrigated agricultural field located upgradient from the former pit areas. Ranger concurs with the prior site environmental consultants that affected groundwater appears to be flowing onto the site from the irrigated agricultural fields to the north.

### **3.2 2020-2021 SESI Soil Investigation**

In August 2020 and May 2021, additional soil investigation activities were completed at the Site by SESI. SESI installed a total of 63 test excavations, collected a total of 99 samples for field screening, and submitted a total of 18 soil samples to the laboratory for analysis. The test excavations were installed to depths ranging from 4' to 8' bgs. The attached "*Soil TPH, BTEX & Chloride Data Summary*" table provides a summary of the soil analytical results from this investigation. Also attached are a site map illustrating the soil sampling locations and copies of the laboratory analytical reports.

As presented in the attached soil analytical table, elevated chloride concentrations above the 19.15.29.12 NMAC *Table 1 Closure Criteria for Soils Impacted by a Release (GW  $\leq$  50')* remain present at the site that will require remediation. The extent of the soil chloride exceedances was not, however, defined during the August 2020 and May 2021 soil investigation activities. Additional soil delineation activities will thus be required in order to enable development of the site remediation plan.

## **4.0 CURRENT SITE COMMUNICATIONS AND CORRESPONDENCE**

In 2023, EOG engaged Ranger to assist in the continuation of the assessment and remediation efforts at the Site, as well as to re-establish communications with the NMOCD regarding the Site. In May 2023, Ranger personnel participated in a conference call with Mr. Nelson Velez of the NMOCD regarding the subject site. The call included a review of the Site history, the presentation of data collected since 2005, review of the current status of the Site, and a discussion of the appropriate regulatory path forward. It was agreed this report would be prepared to assist the NMOCD in determining the appropriate path forward for the Site.

## 5.0 REGULATORY GUIDANCE REQUEST

In a desire to properly address the documented impacts at the Site and bring the Site into compliance with current regulatory guidelines, EOG respectfully requests NMOCD guidance regarding the appropriate regulatory reporting/proposal format that will be required for the next phase of site activities. As noted in this report, the extensive groundwater analytical data supports the earlier project conclusions that affected groundwater appears to be flowing onto the subject site from the irrigated agricultural fields to the north.

On March 7, 2001, the NMOCD directed that an abatement plan be prepared for the site due to the elevated groundwater chloride concentrations. Based upon the extensive groundwater analytical data available at this time which has documented that chloride-affected groundwater is flowing onto the site from a source to the north, it is Ranger's respectful opinion that a groundwater abatement plan is not currently needed for the subject site, and that the site soil impacts should be addressed appropriately. As noted above, further soil delineation activities will be necessary in order to enable development of the site remediation plan.

Upon NMOCD determination of the appropriate regulatory mechanism and reporting format for the next phase of site work, Ranger will prepare a detailed work plan for NMOCD review. In the interim, groundwater monitoring activities will be continued along with the submittal of annual groundwater monitoring reports.

## FIGURES

Topographic Map

Area Map

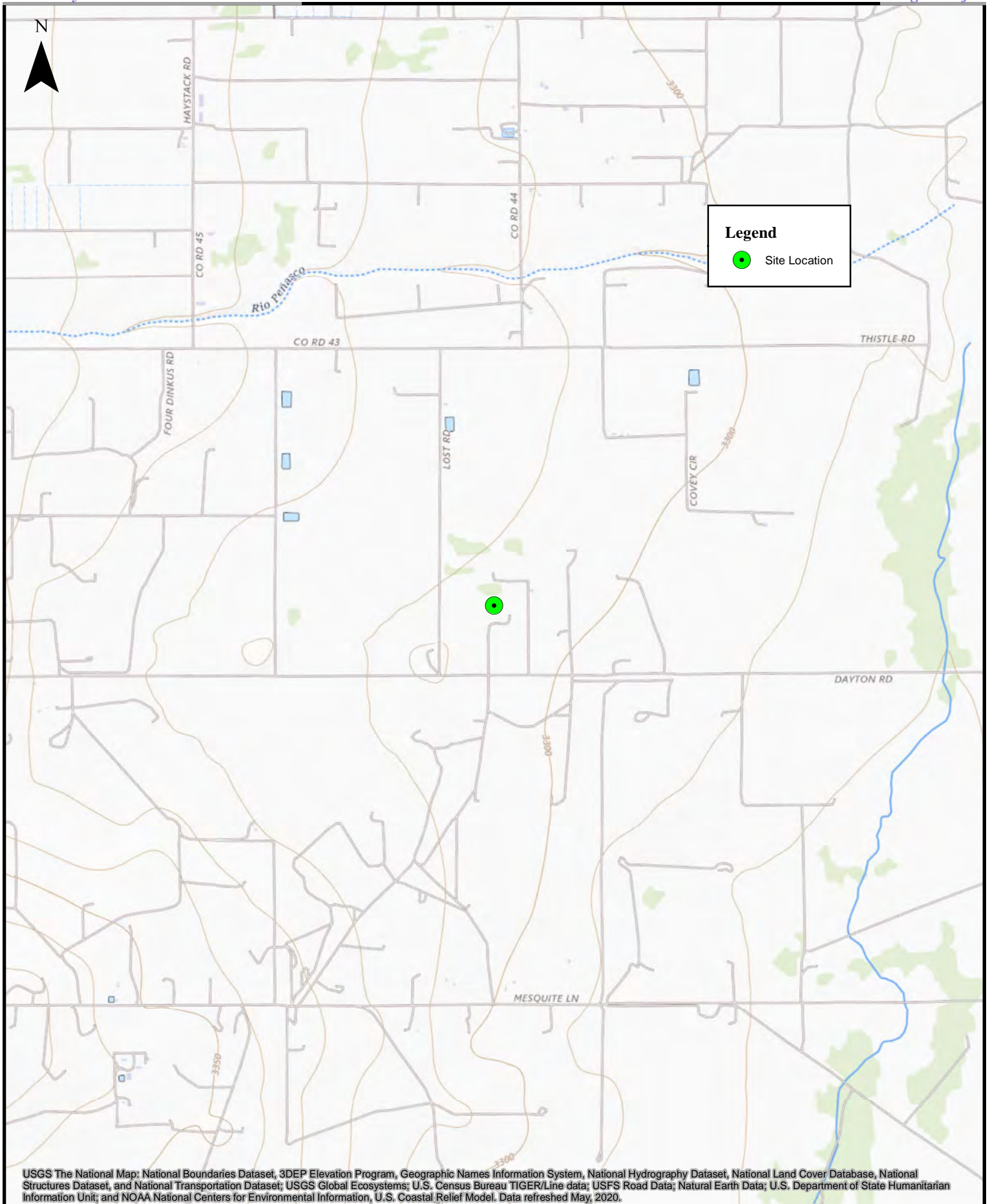
Site Map

Groundwater Gradient Maps (2002 – 2021)

Groundwater Isoconcentration Maps

2020 - **2021** Soil Sample **e** Location **Map**



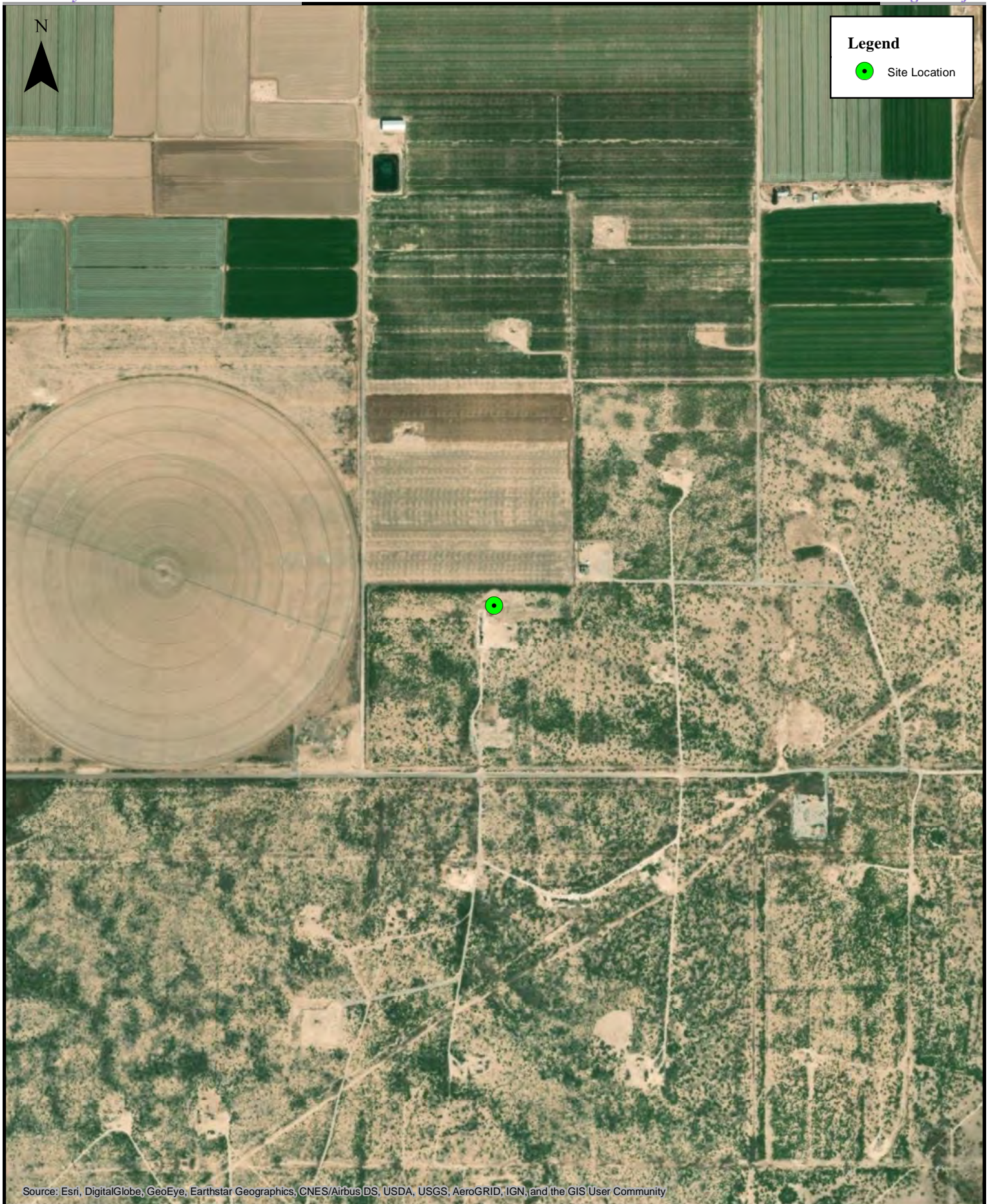


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**Topographic Map**  
Lattion Pit  
EOG Resources, Inc.





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

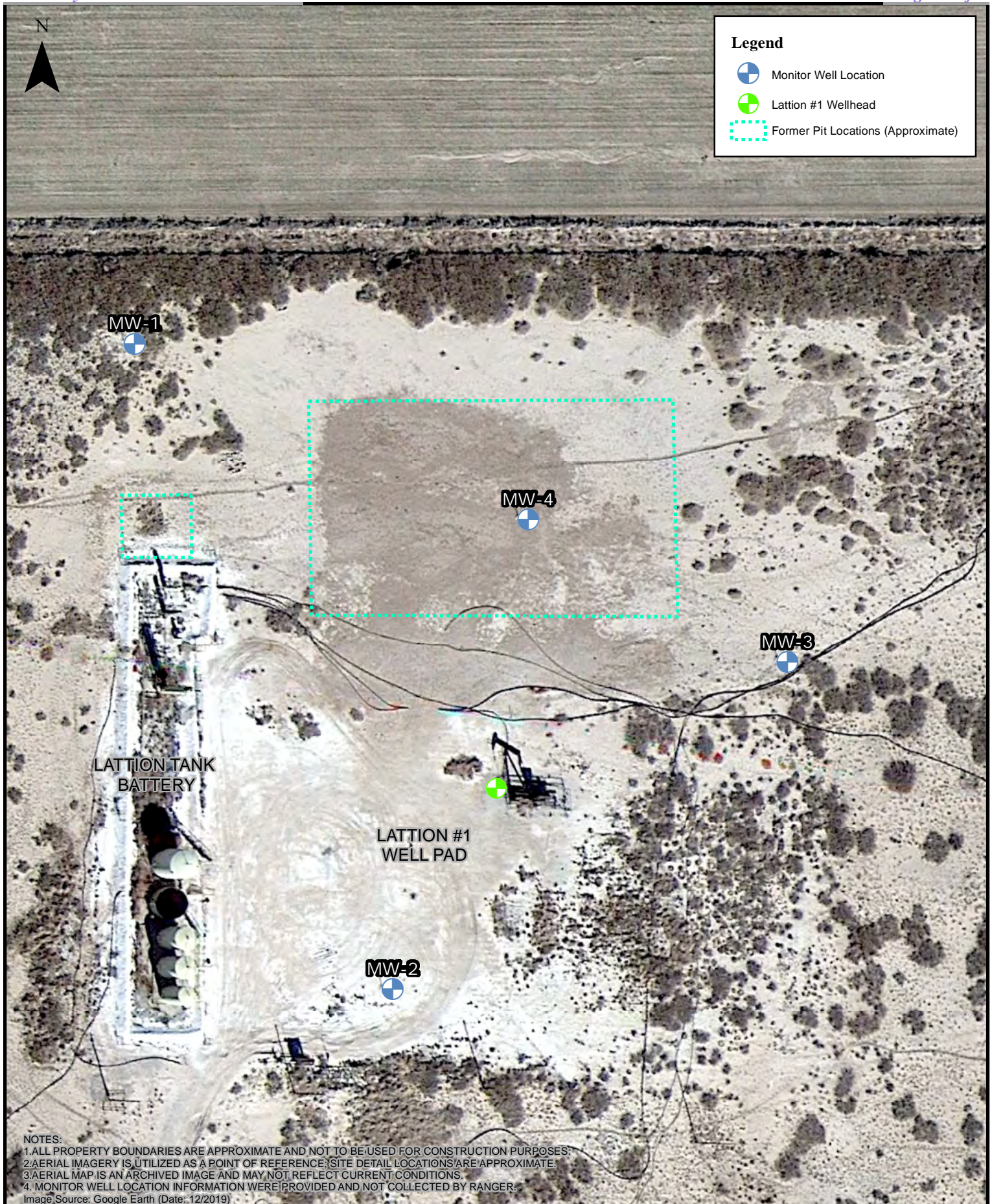


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**Area Map**  
Lattion Pit  
EOG Resources, Inc.



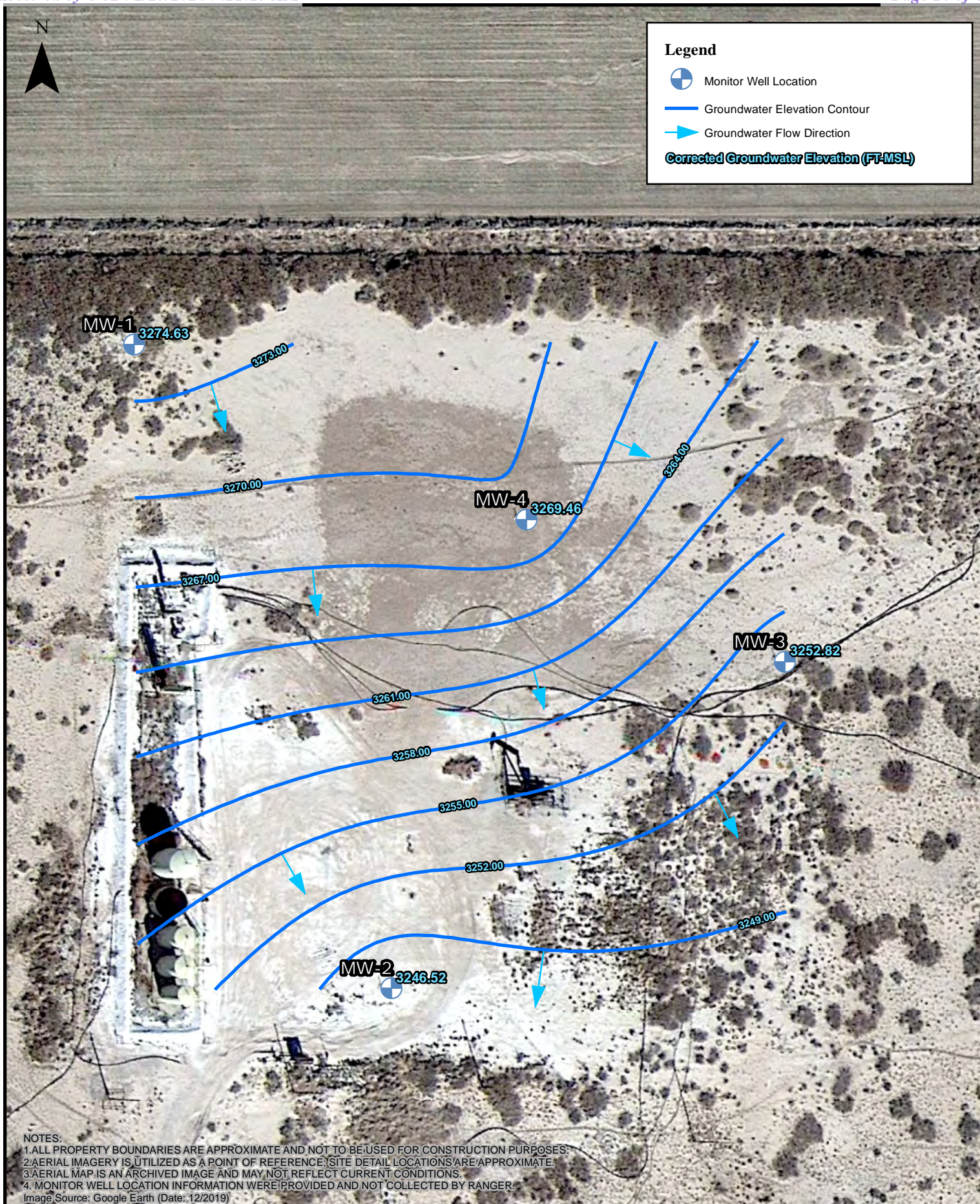


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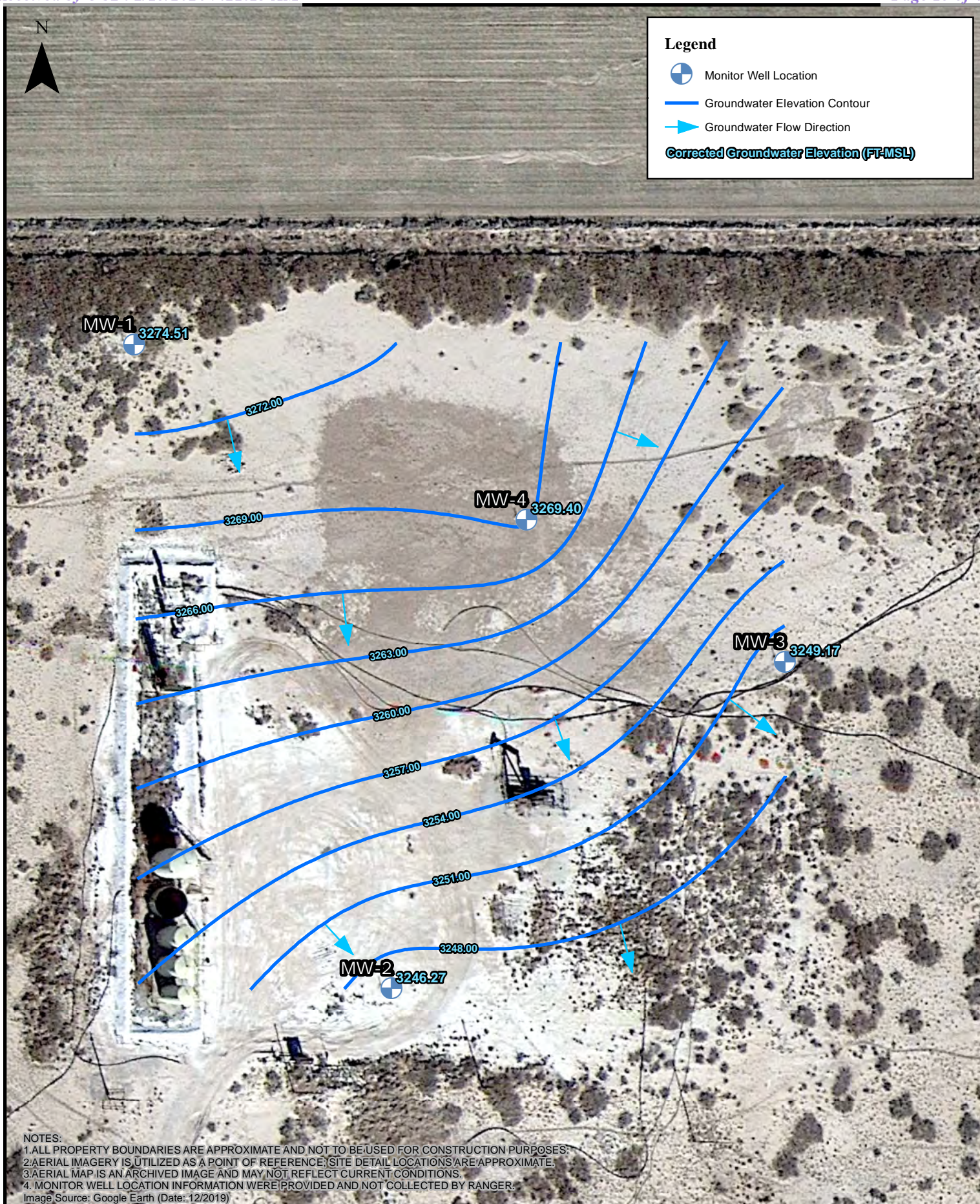
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**Site Map**  
Lattion Pit  
EOG Resources, Inc.









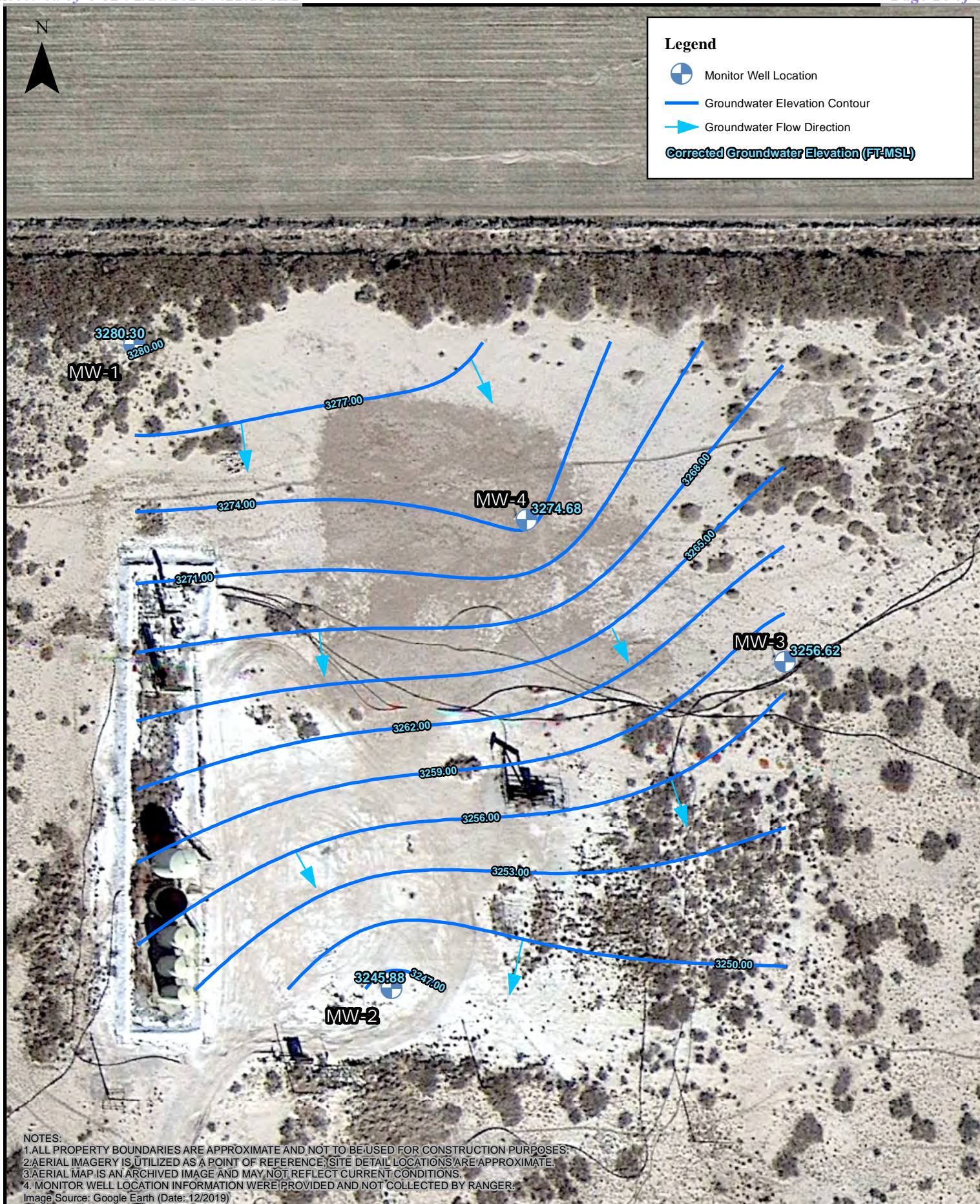
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**Groundwater Gradient Map (09/19/2002)**

Lattion Pit  
EOG Resources, Inc.





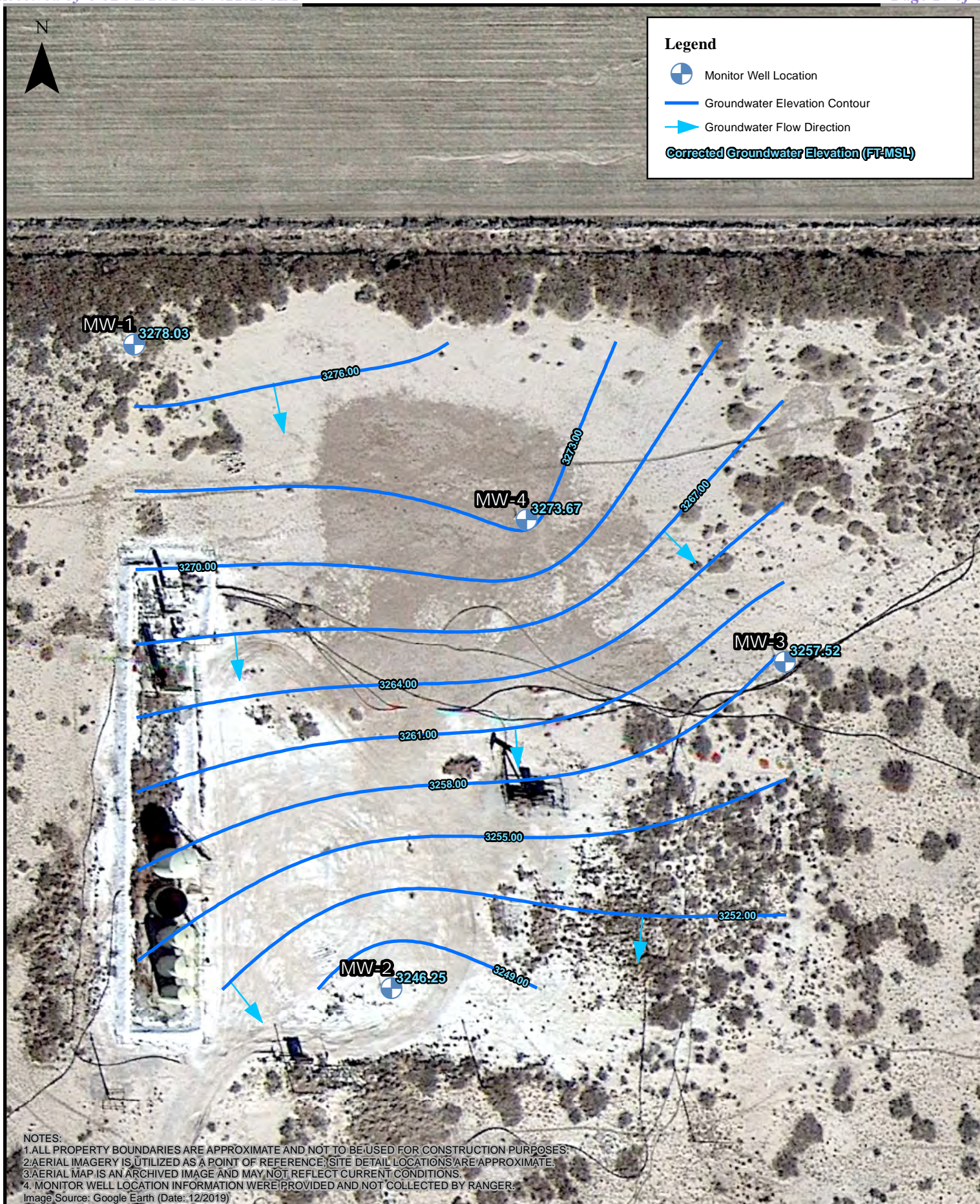
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**Groundwater Gradient Map (11/03/2004)**

Lattion Pit  
EOG Resources, Inc.





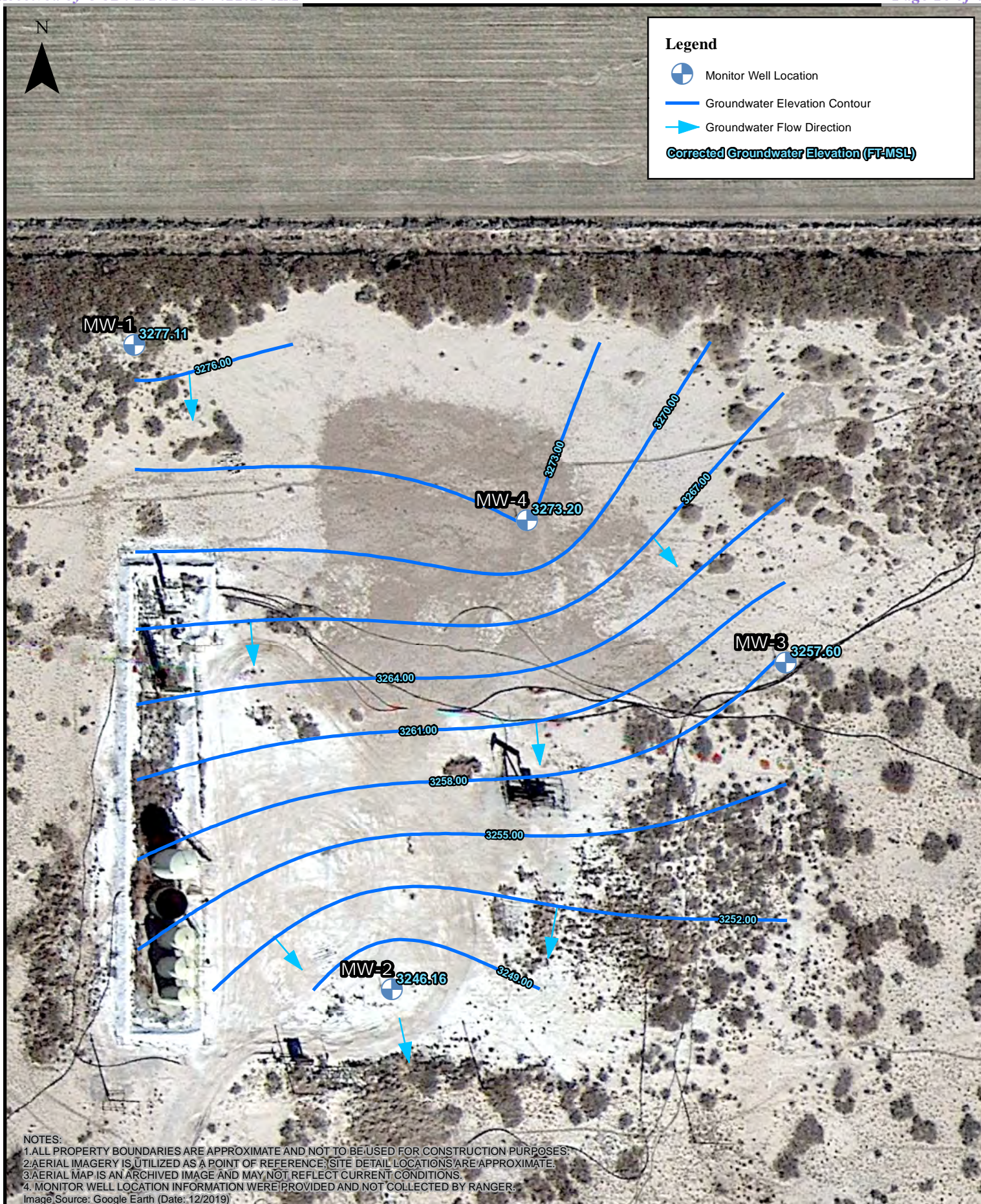
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**Groundwater Gradient Map (12/02/2004)**

Lattion Pit  
EOG Resources, Inc.





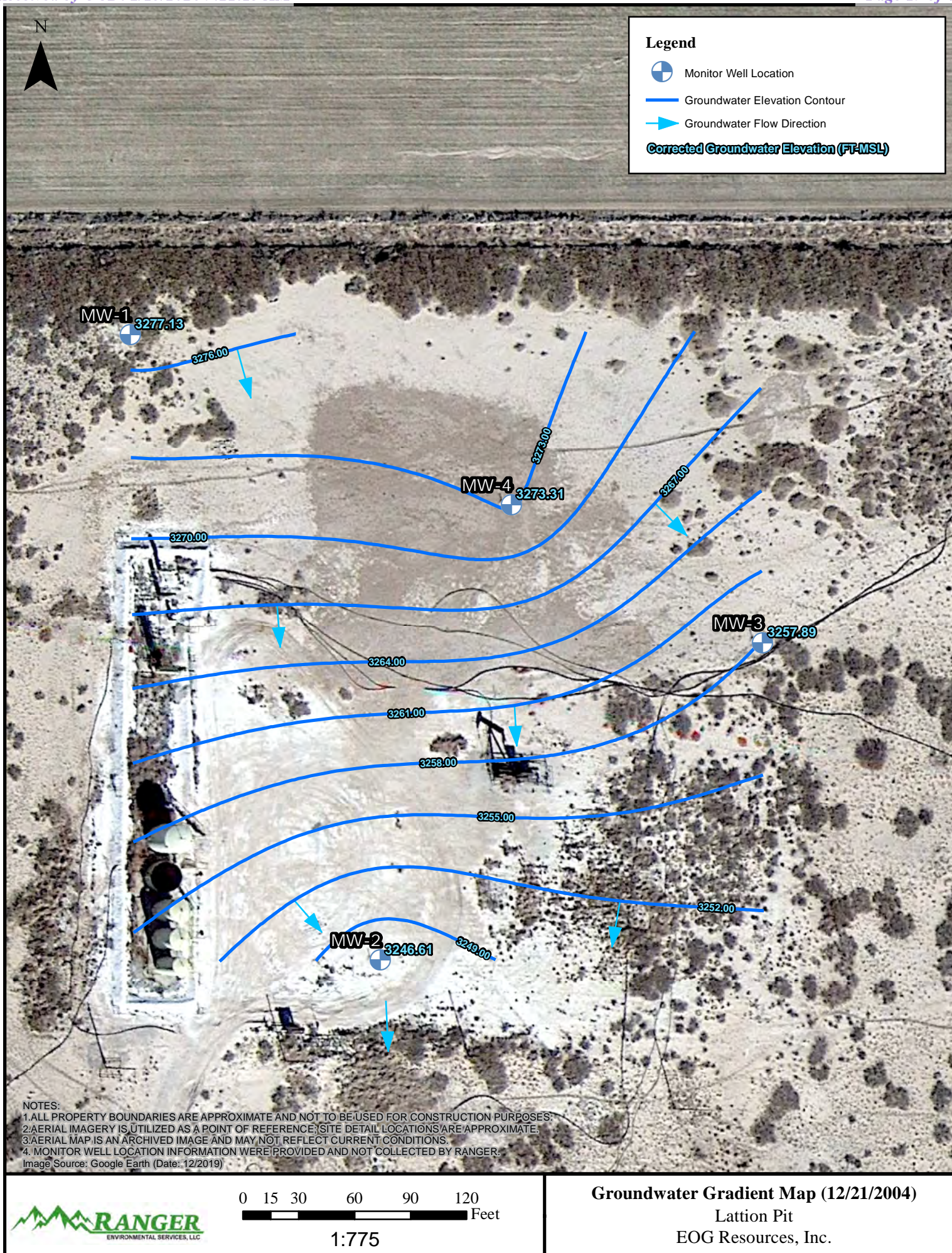
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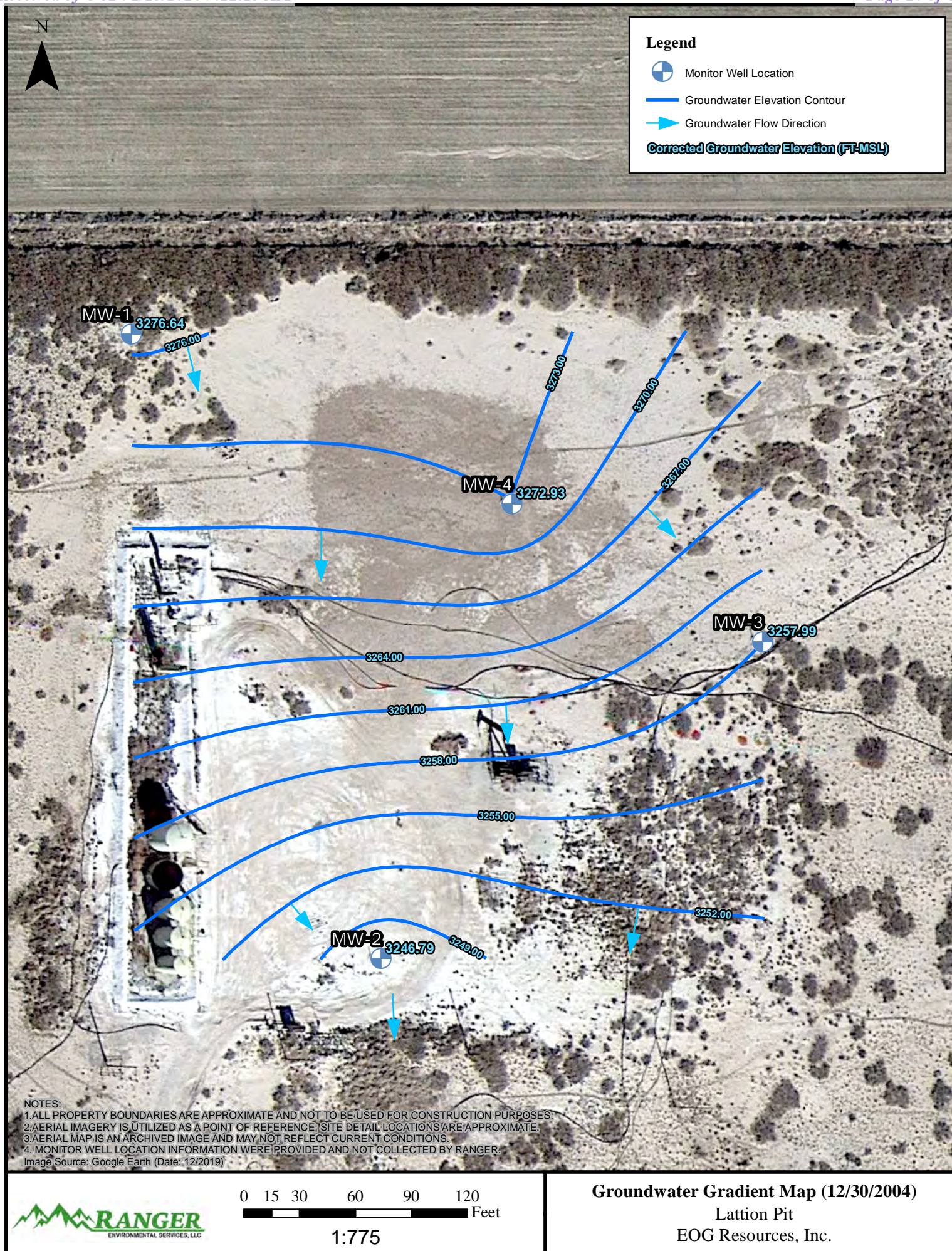
### Groundwater Gradient Map (12/15/2004)

Lattion Pit  
EOG Resources, Inc.

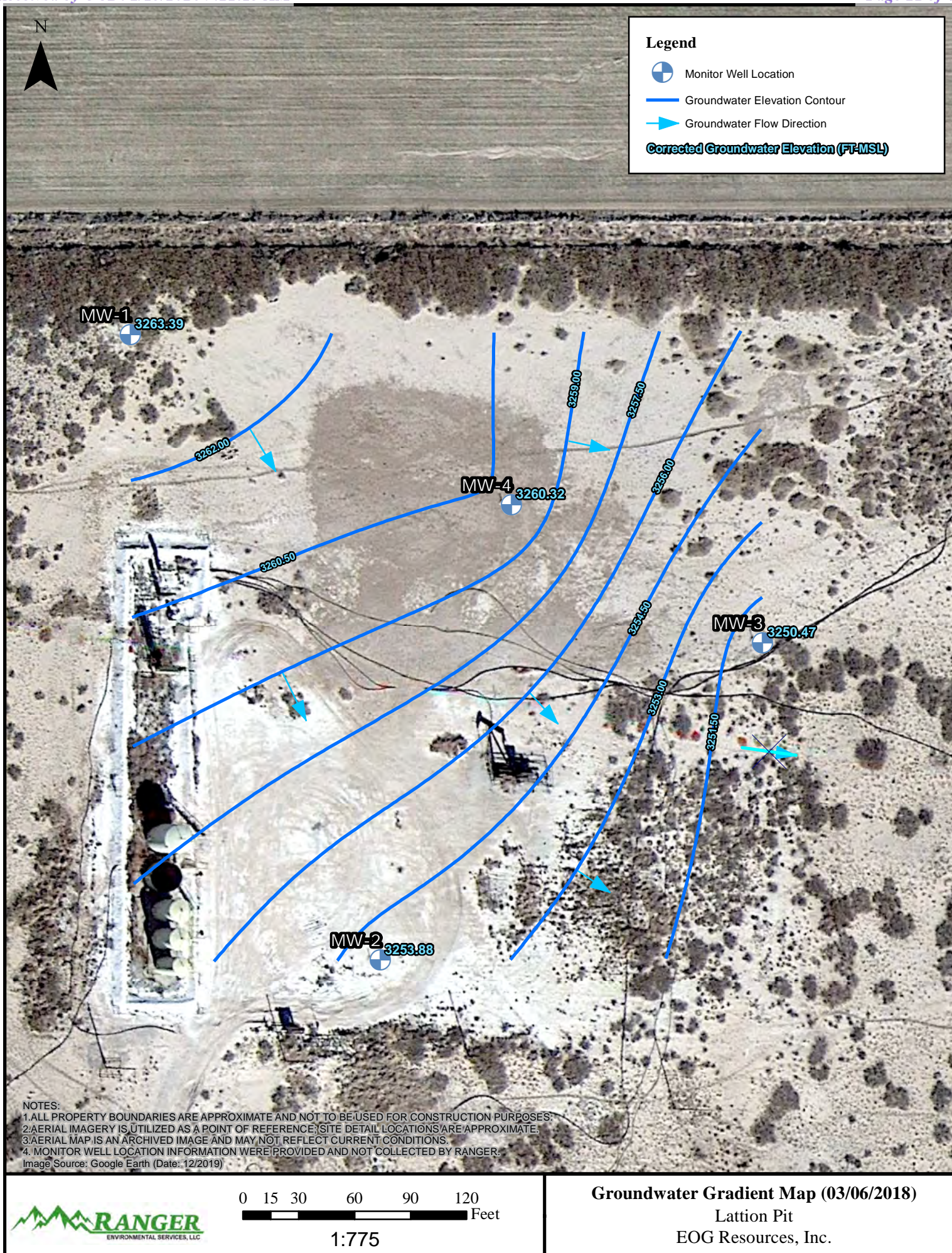




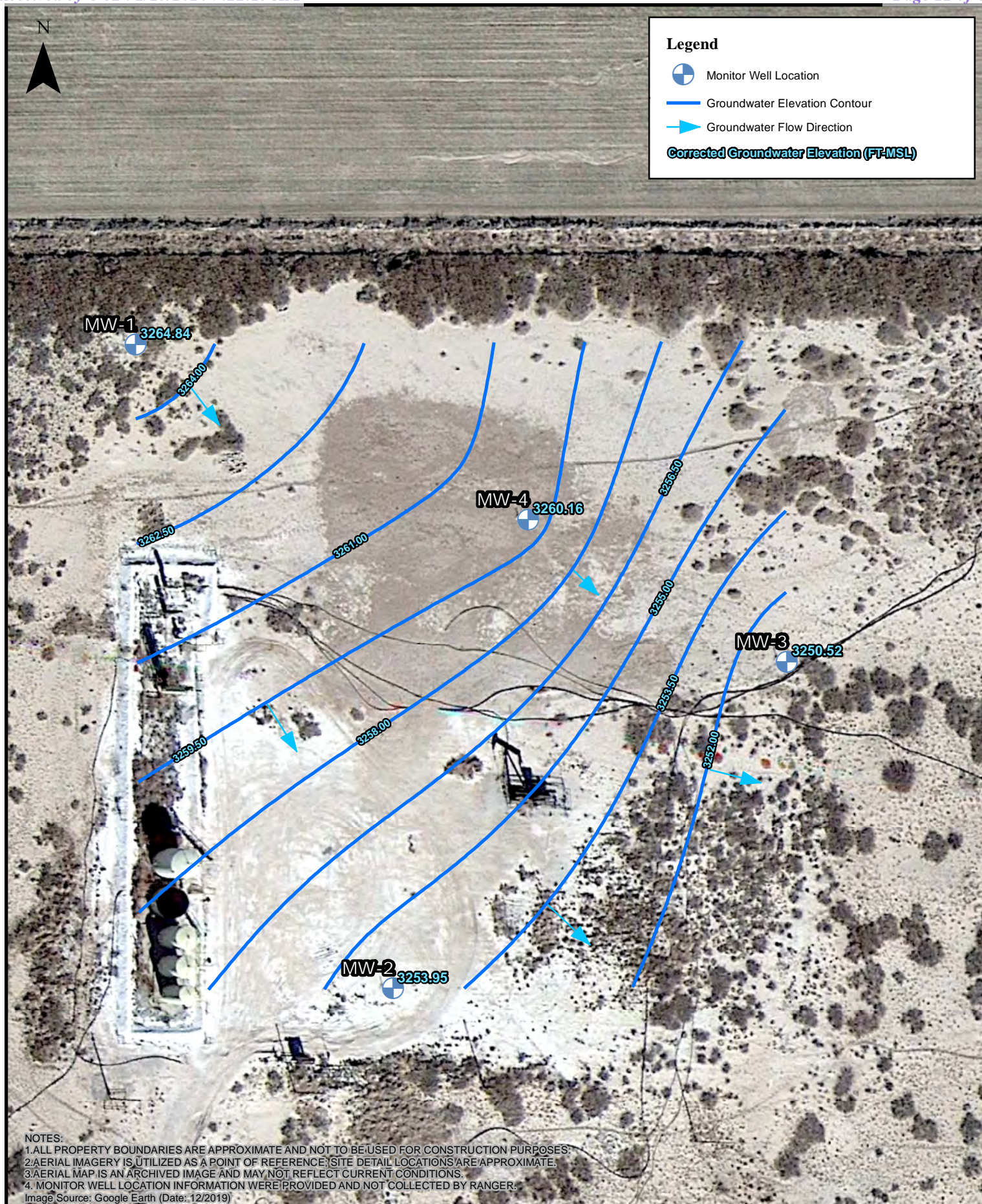
















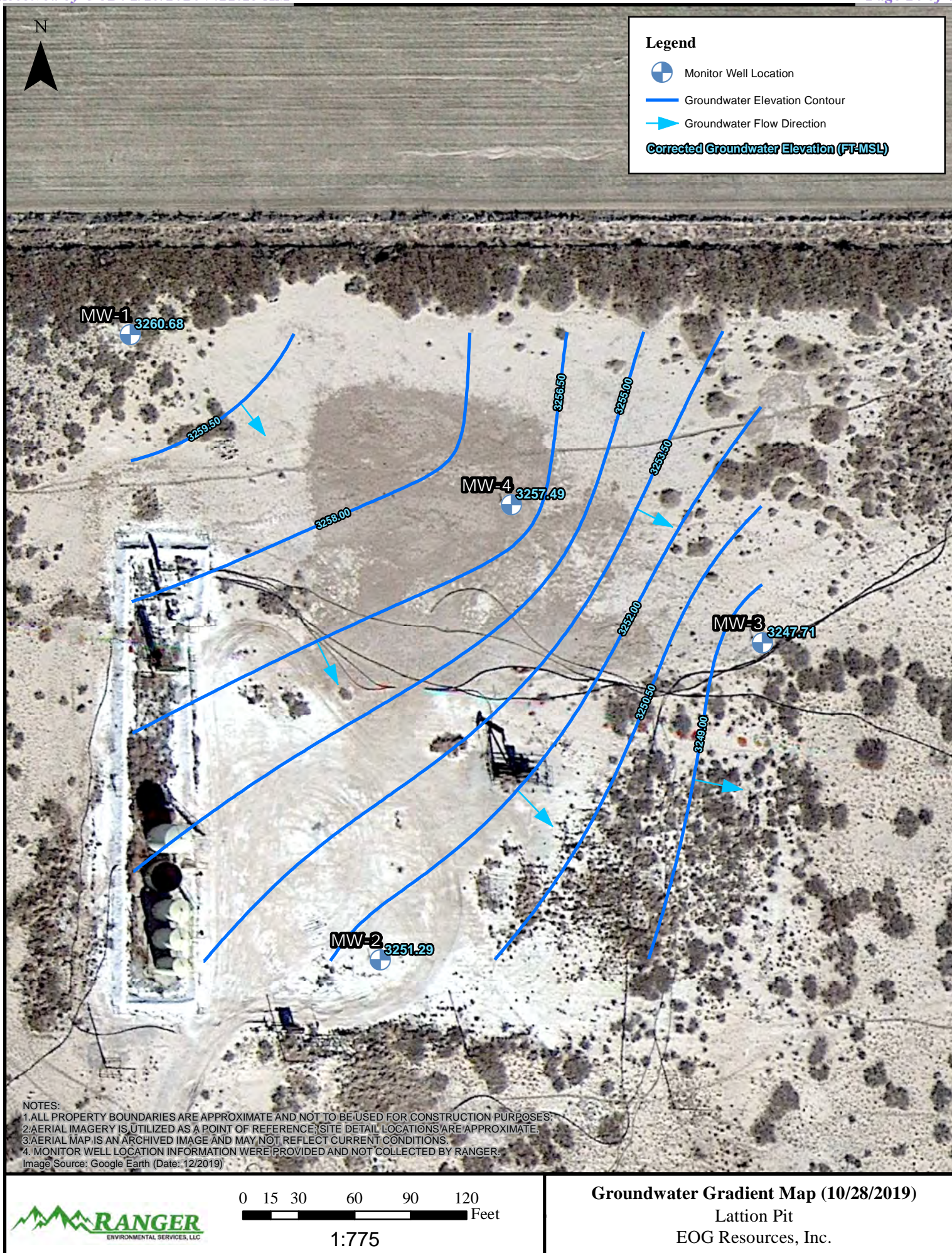
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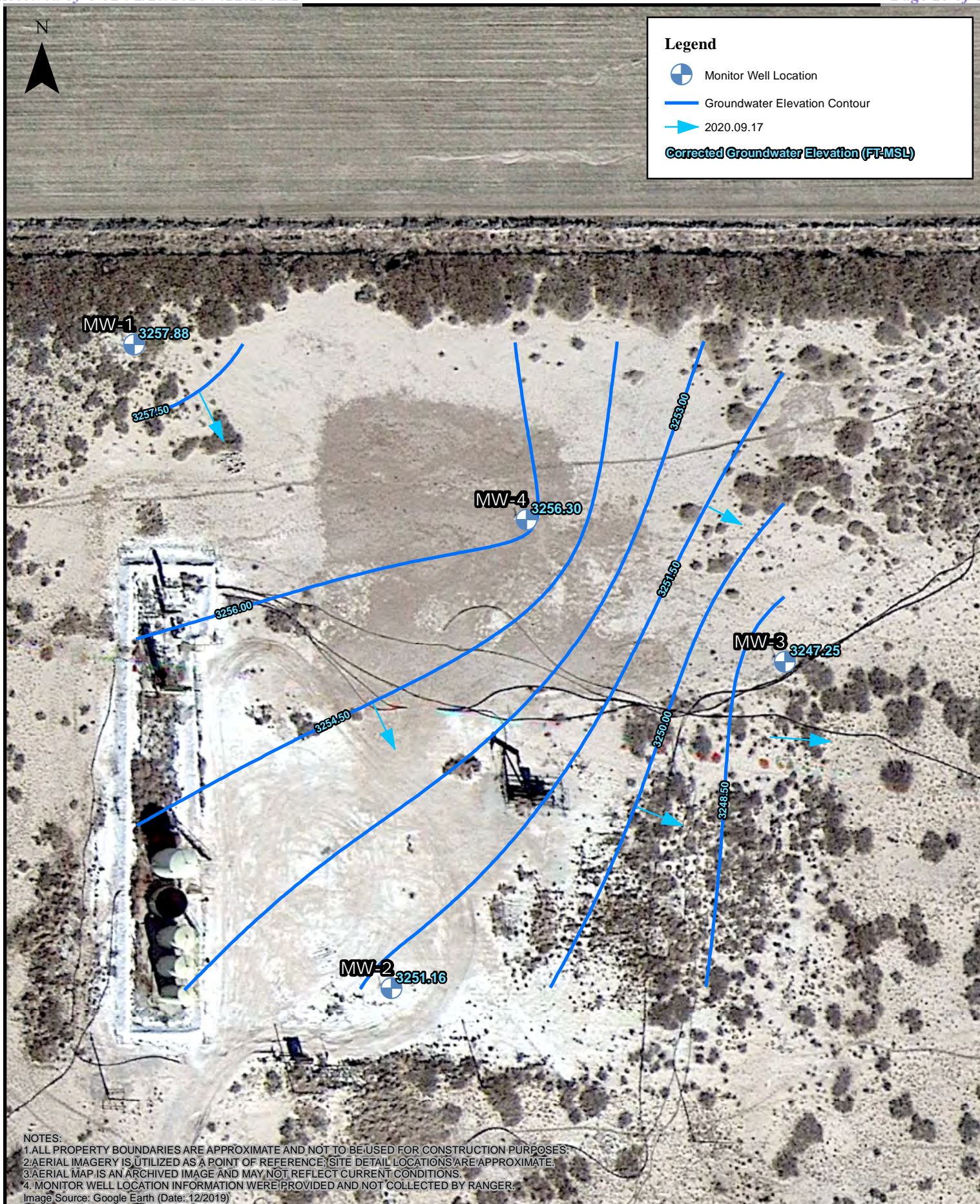
**Groundwater Gradient Map (03/21/2019)**

Lattion Pit  
EOG Resources, Inc.

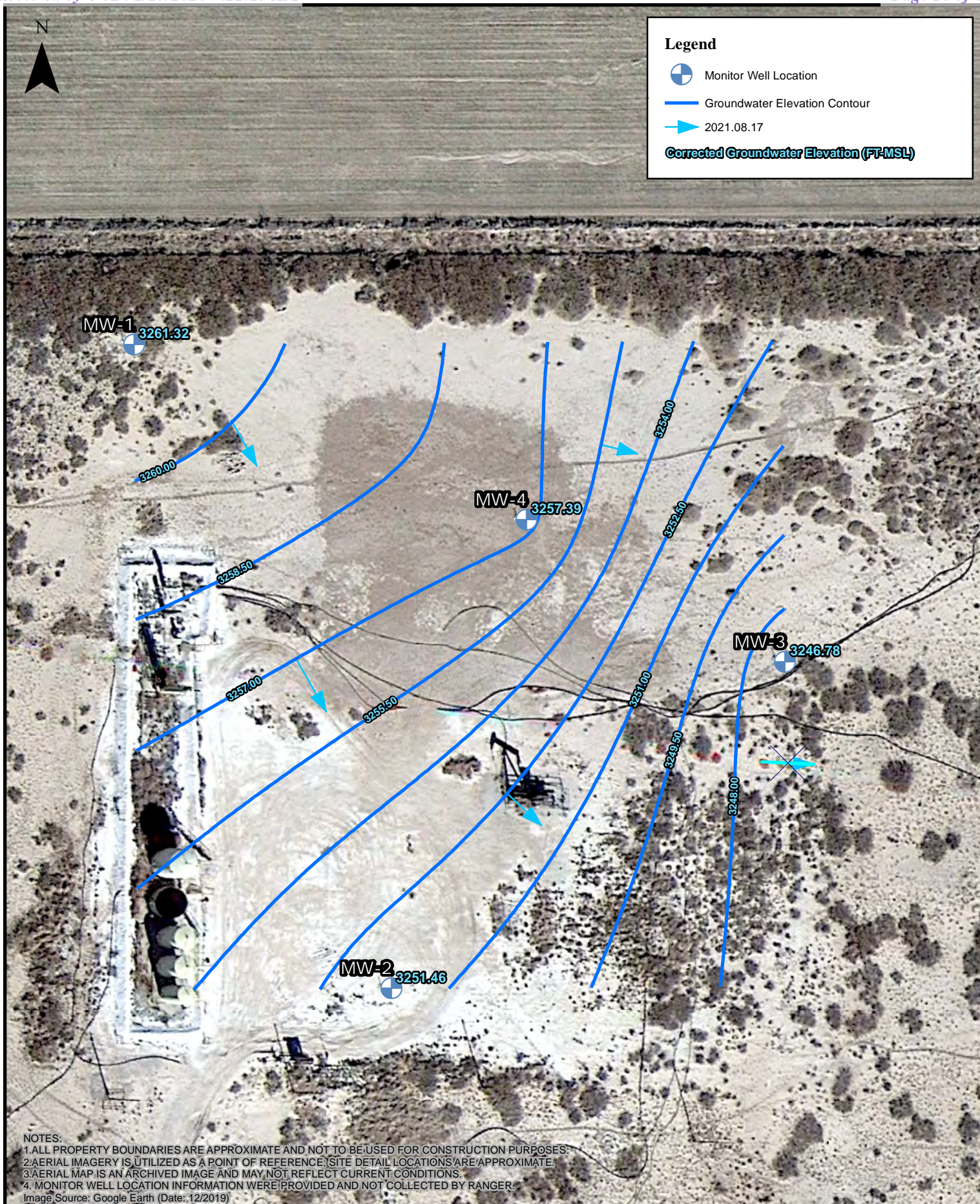












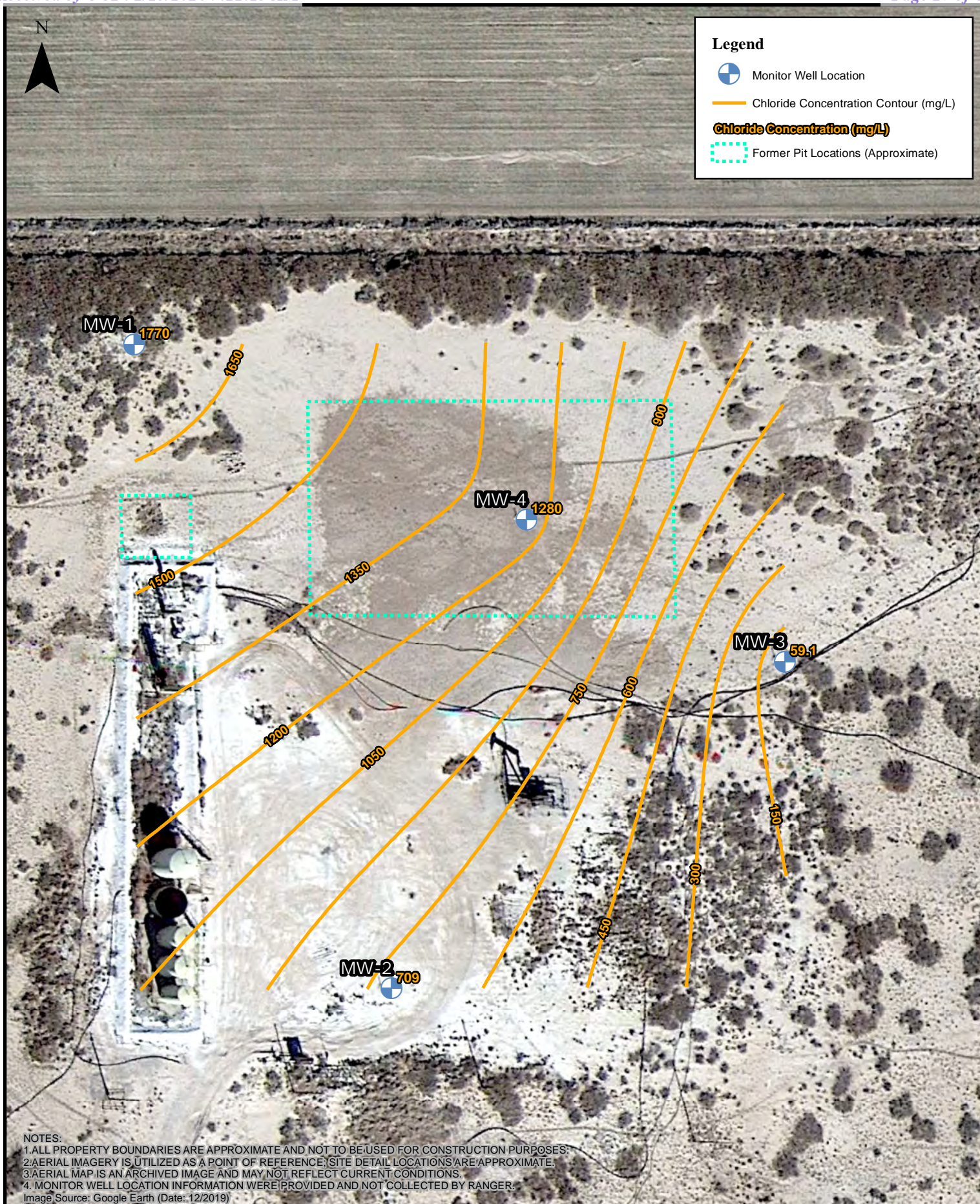
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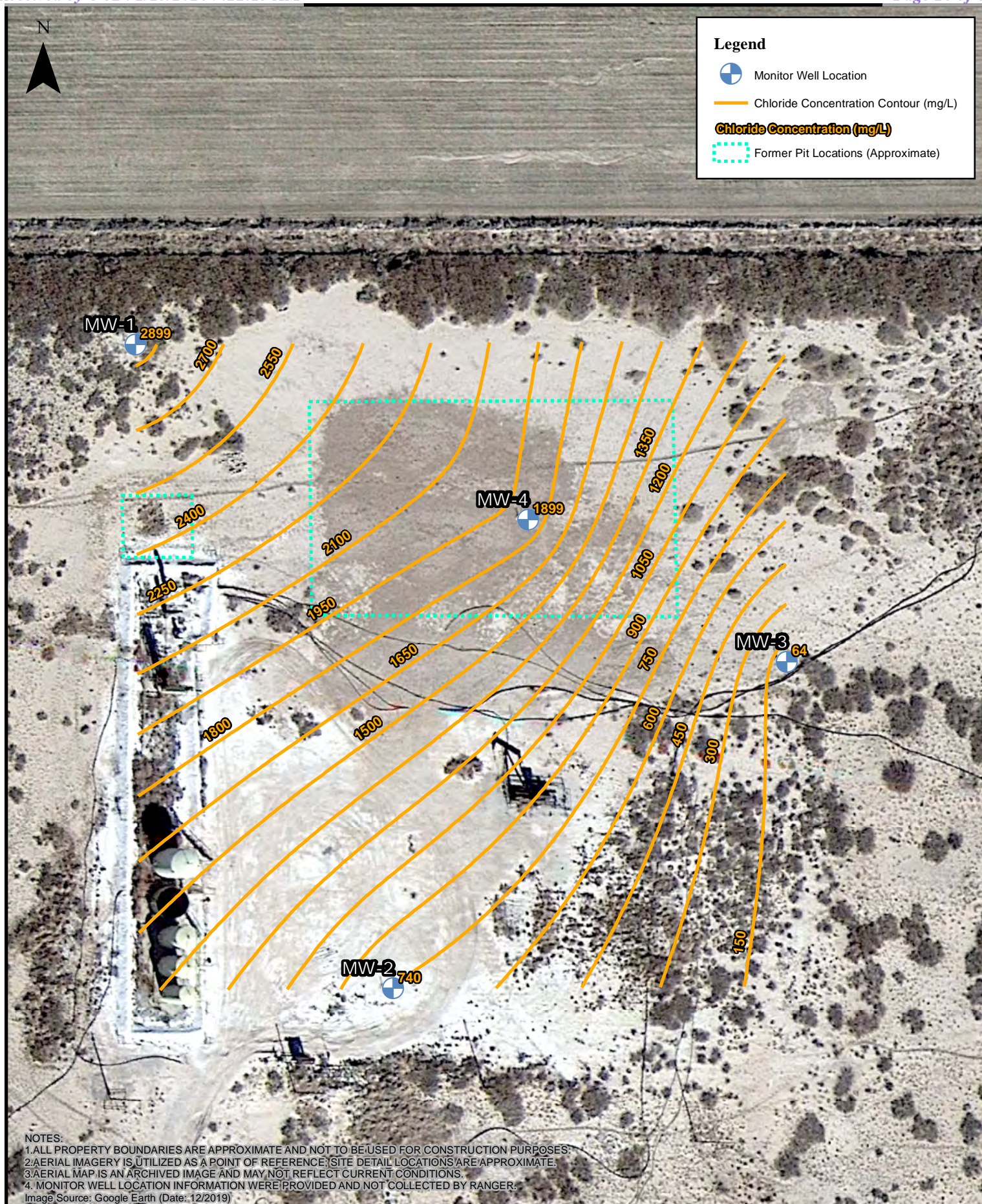
**Groundwater Gradient Map (08/17/2021)**

Lattion Pit  
EOG Resources, Inc.





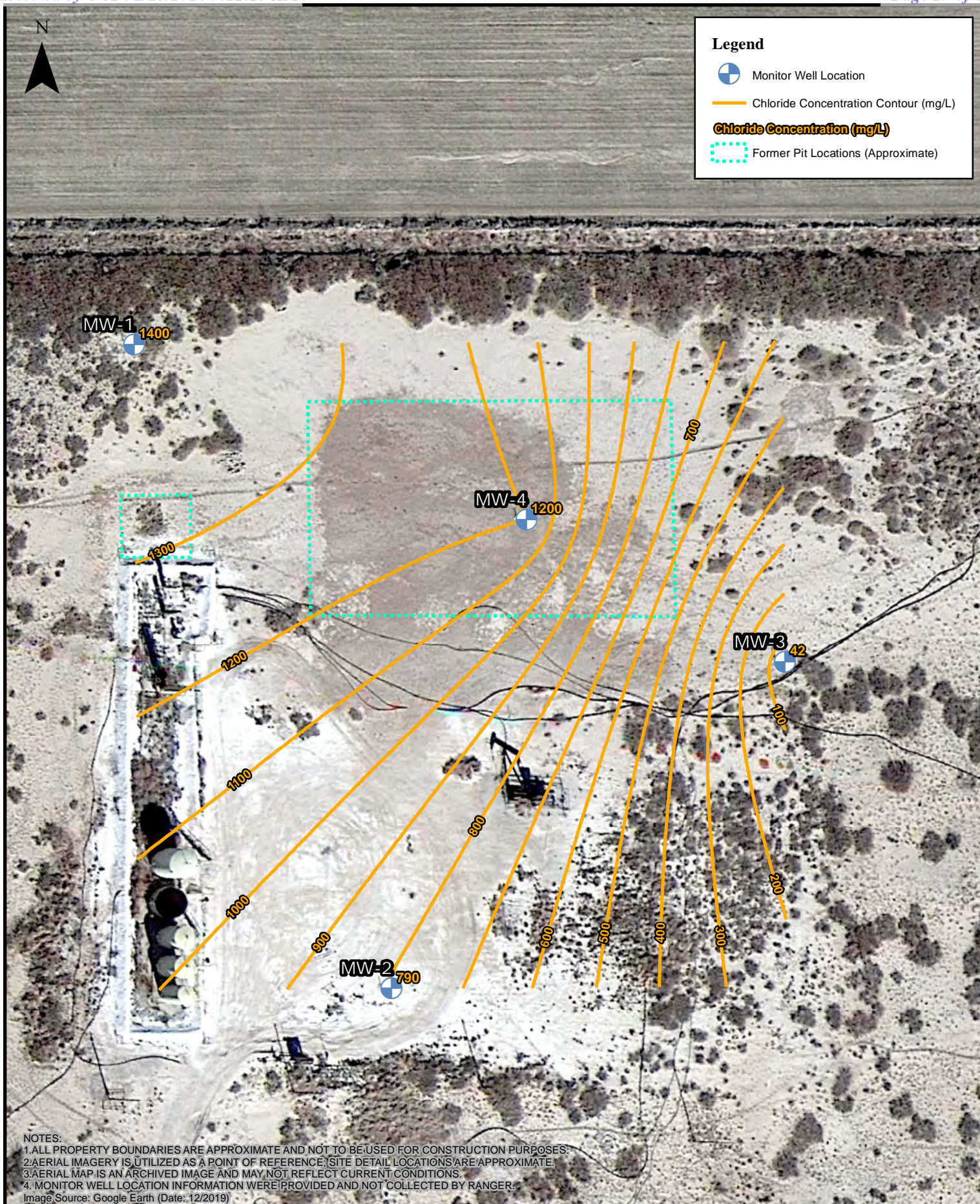




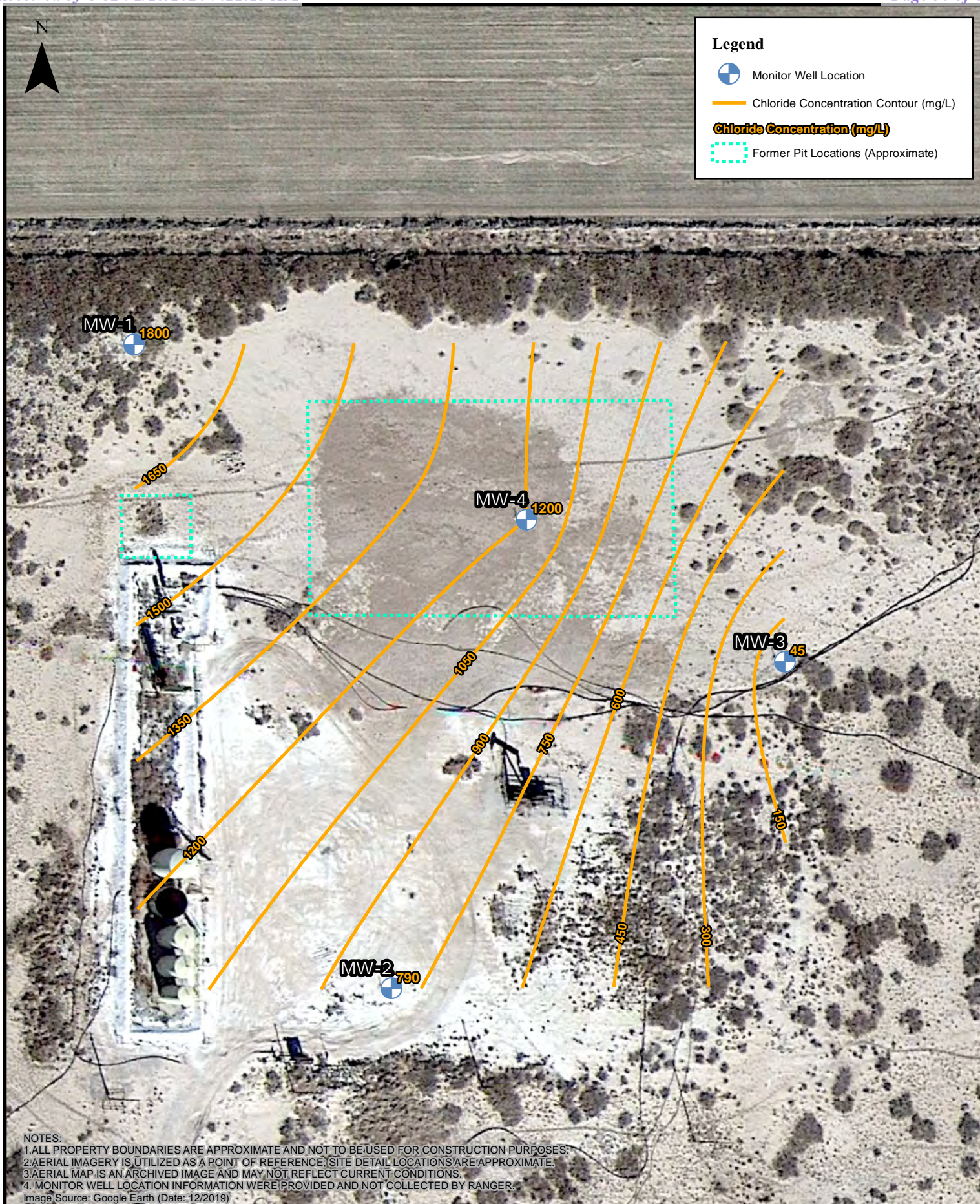
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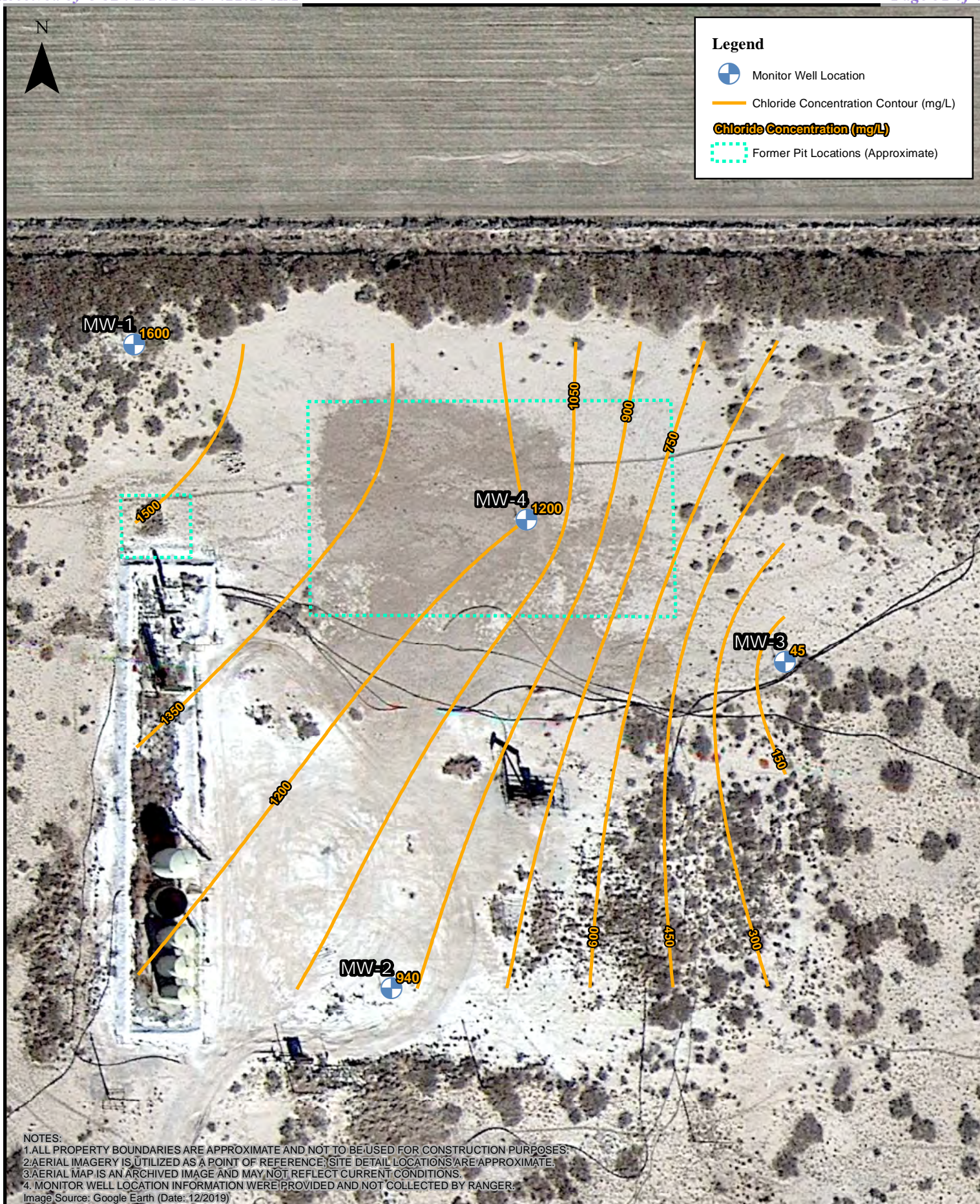




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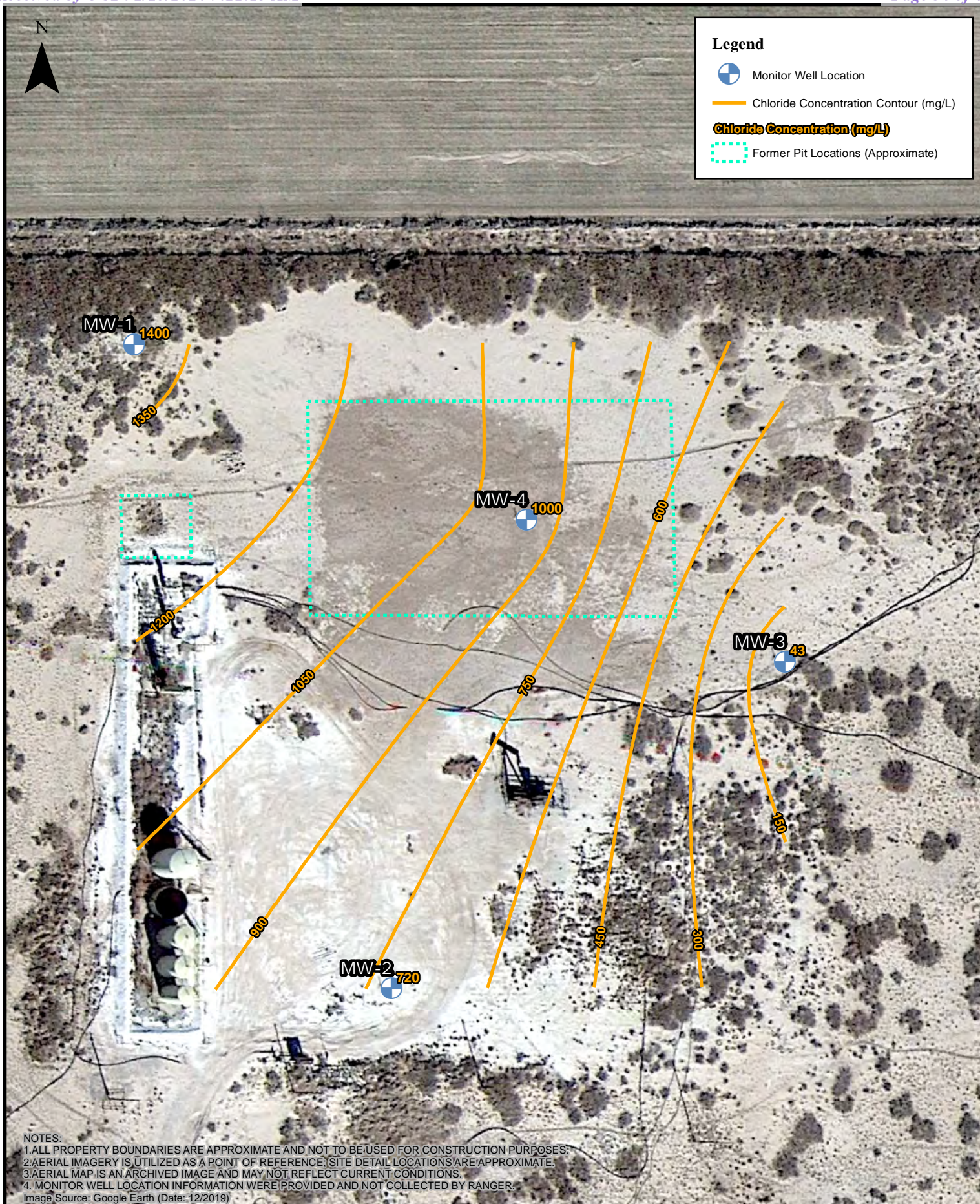
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### Groundwater Chloride Isoconcentration Map (Sample Date: 03/12/2013)

Lattion Pit  
EOG Resources, Inc.





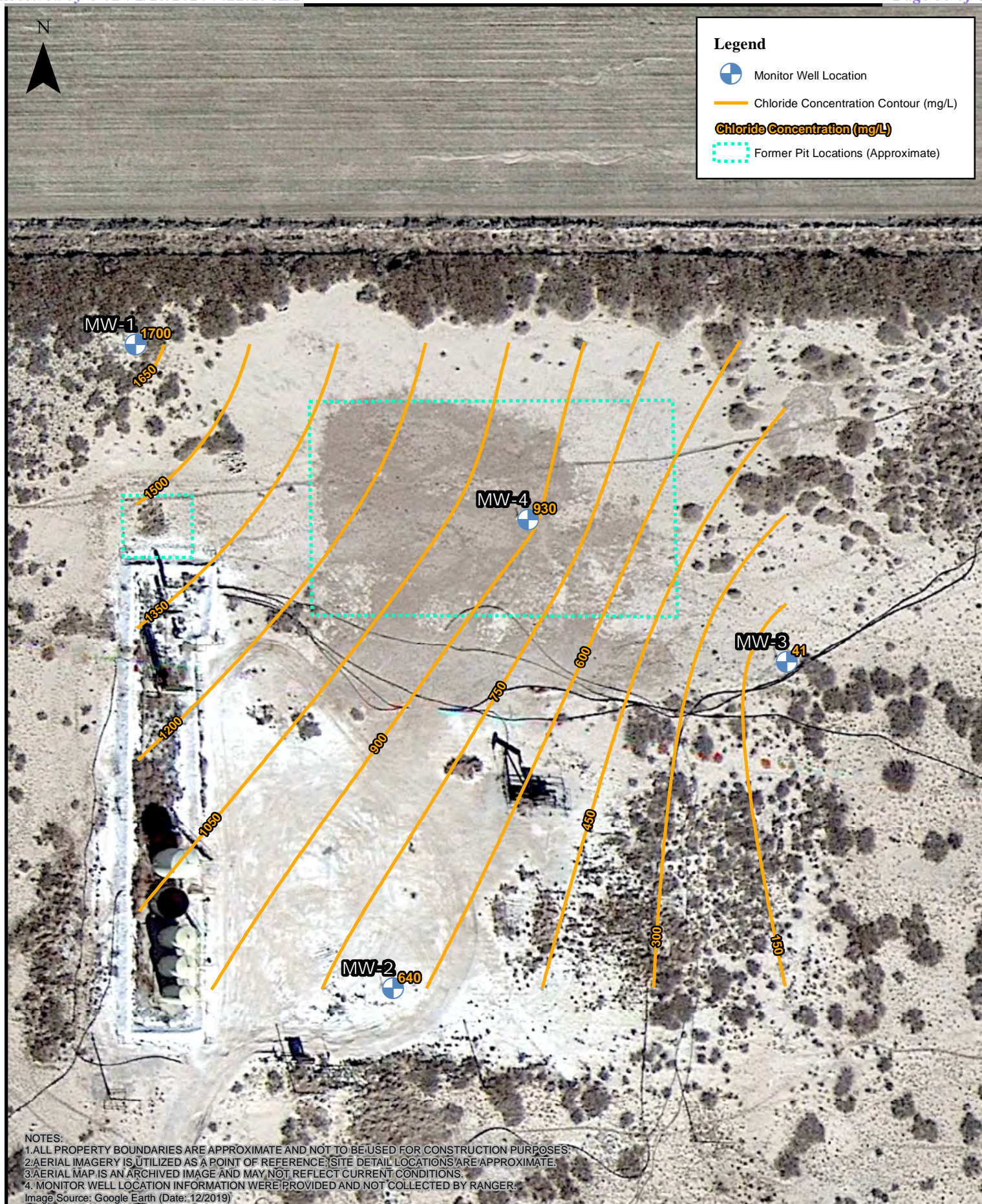
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### Groundwater Chloride Isoconcentration Map (Sample Date: 06/27/2013)

Lattion Pit  
EOG Resources, Inc.

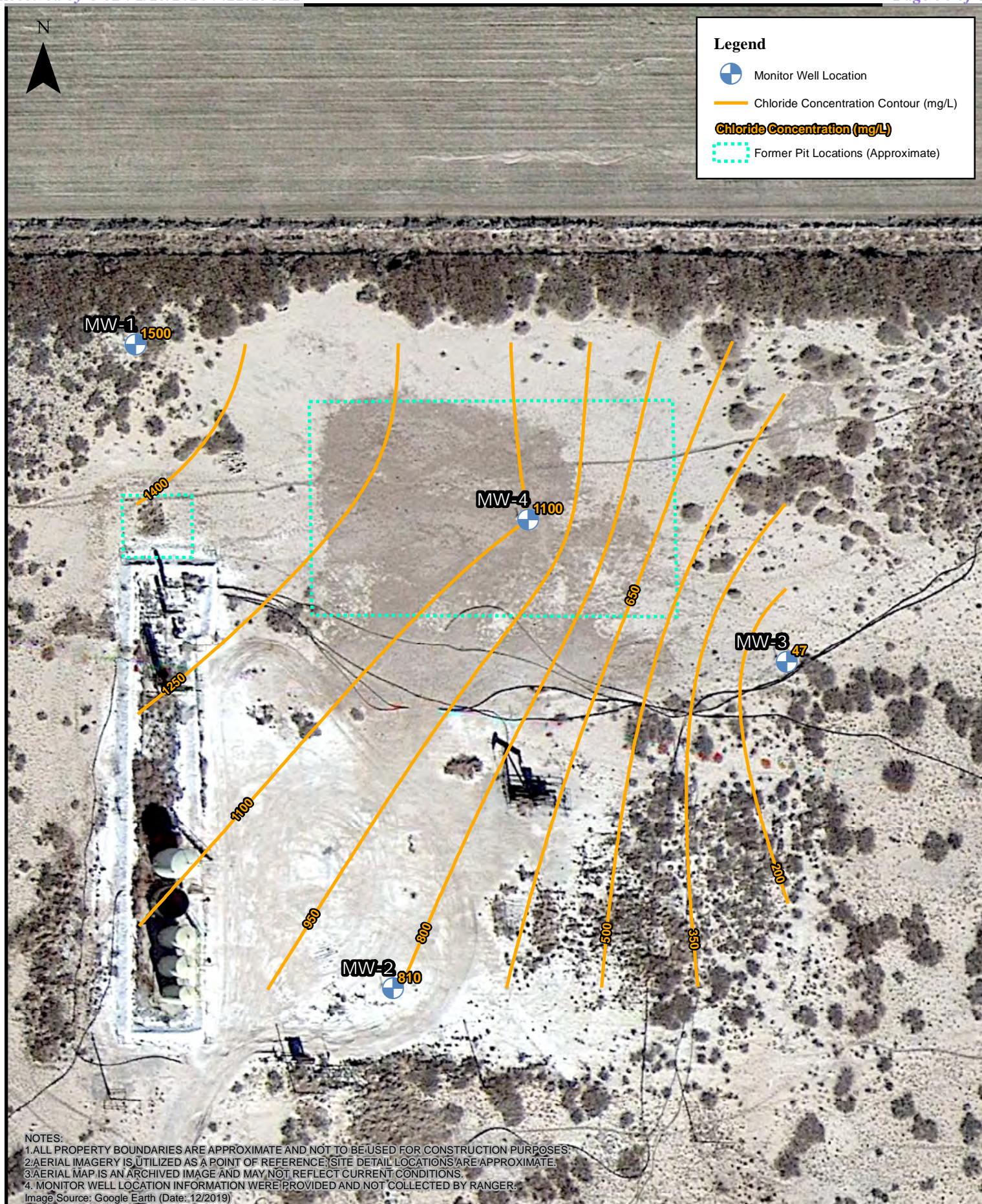




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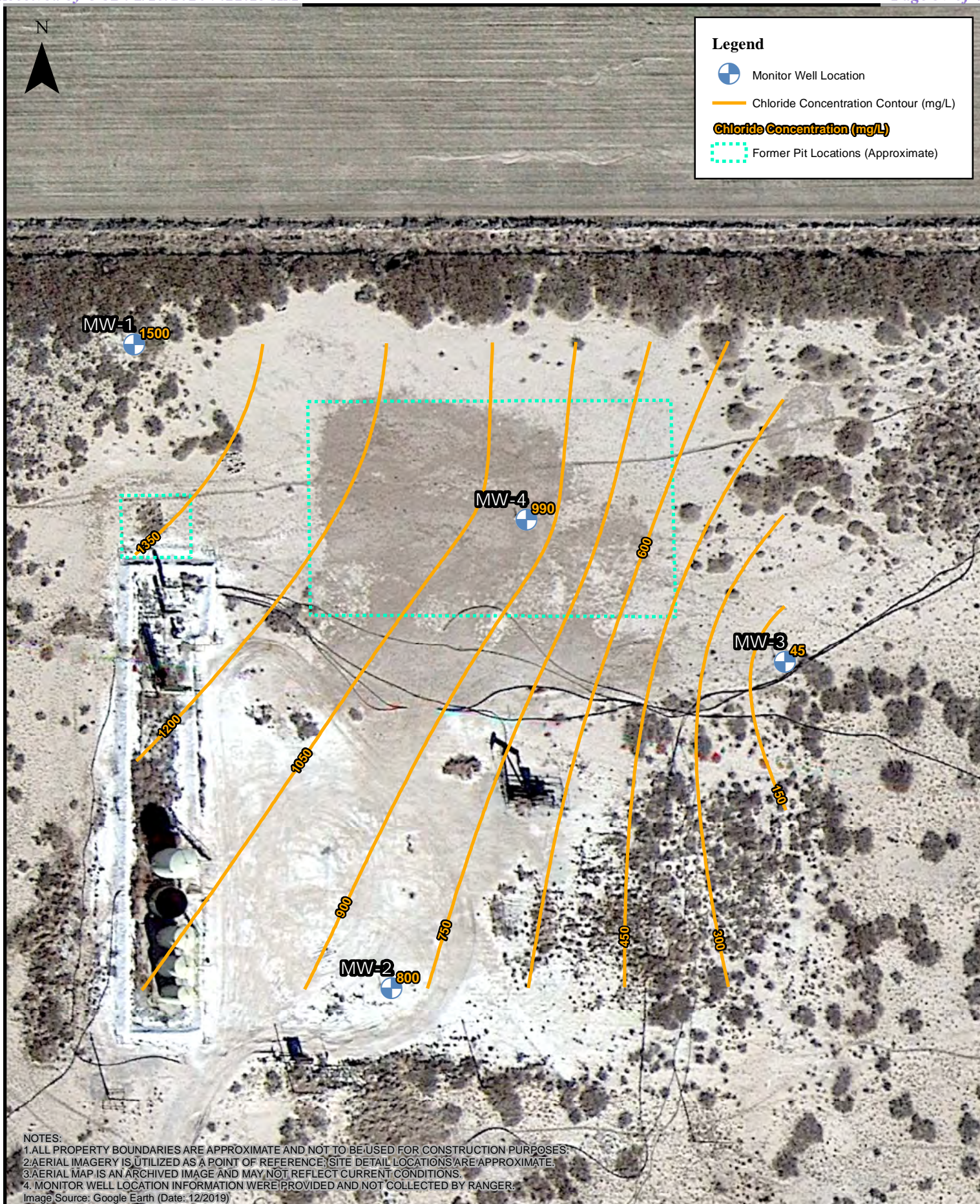




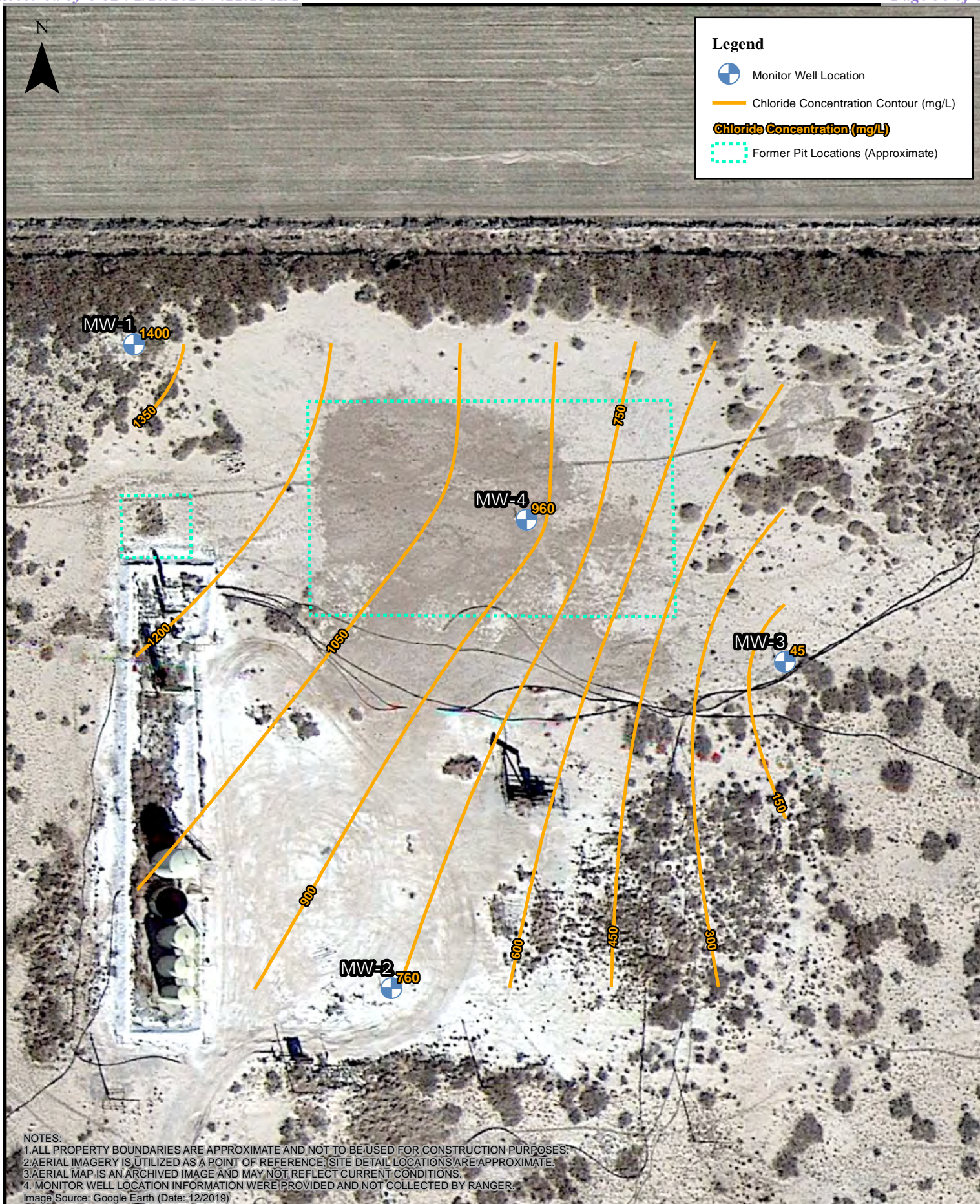
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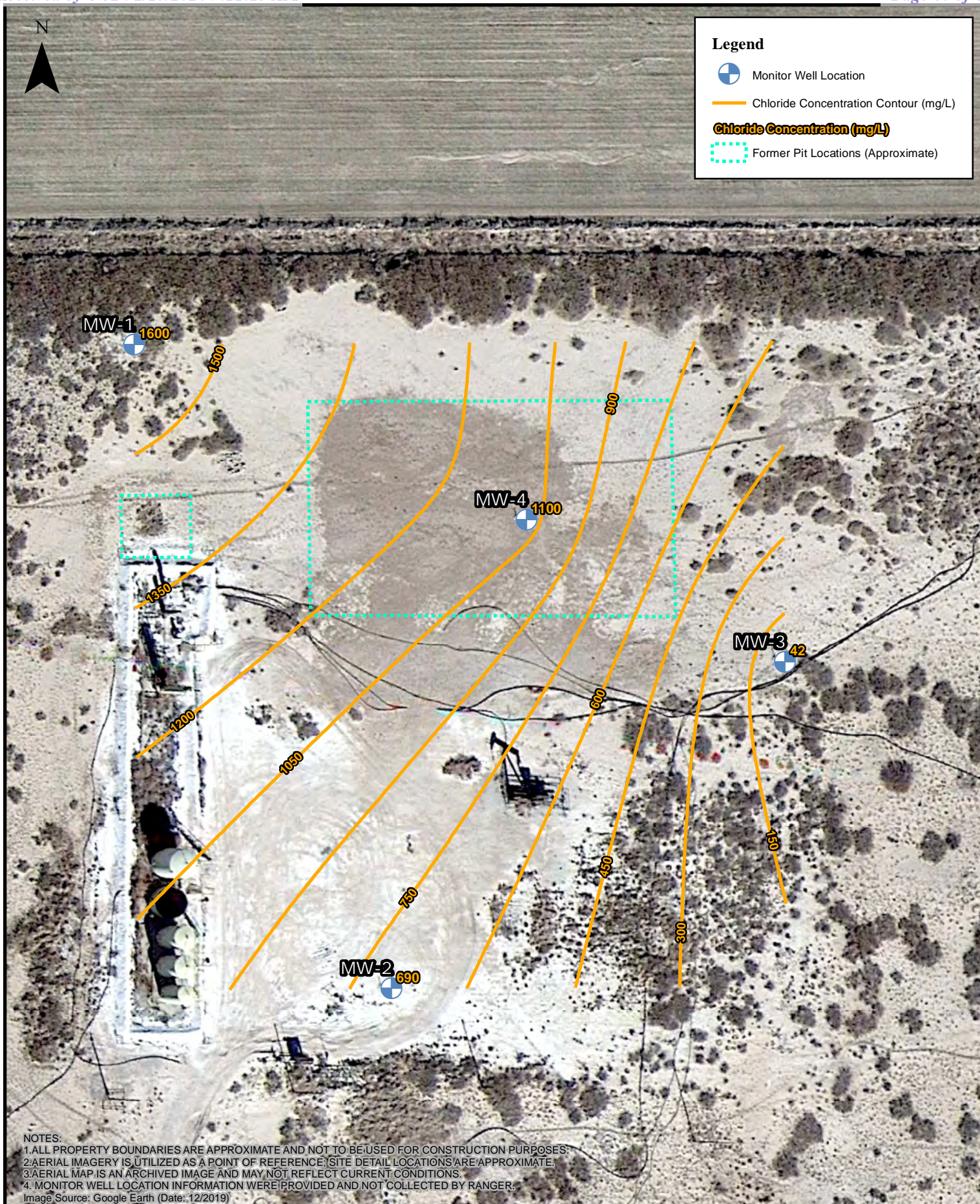




0 15 30 60 90 120 Feet

1:775





0 15 30 60 90 120 Feet

1:775



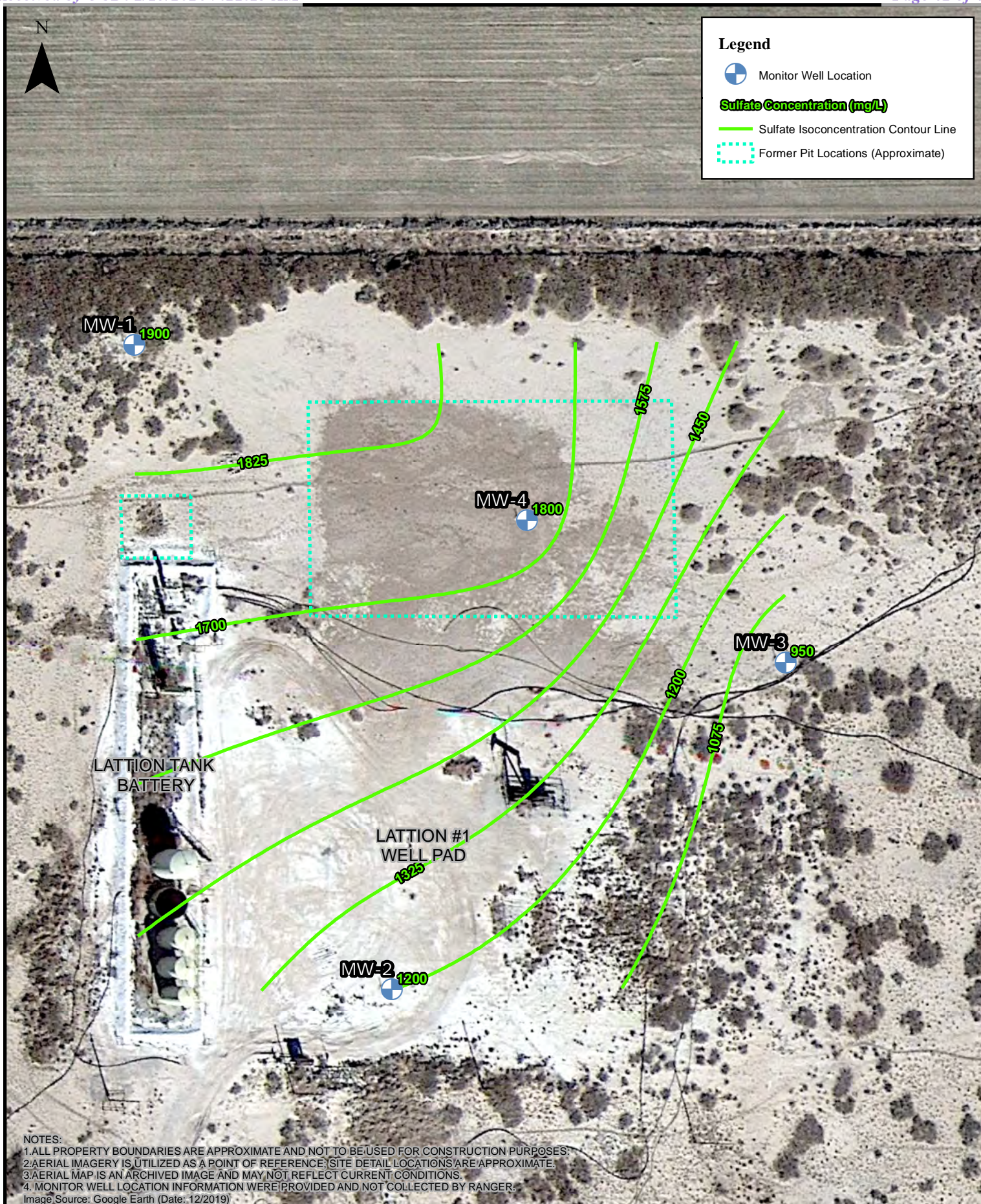


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1:775

**Groundwater Chloride Isoconcentration Map**  
 (Sample Date: 08/04/2022)  
 Lattion Pit  
 EOG Resources, Inc.



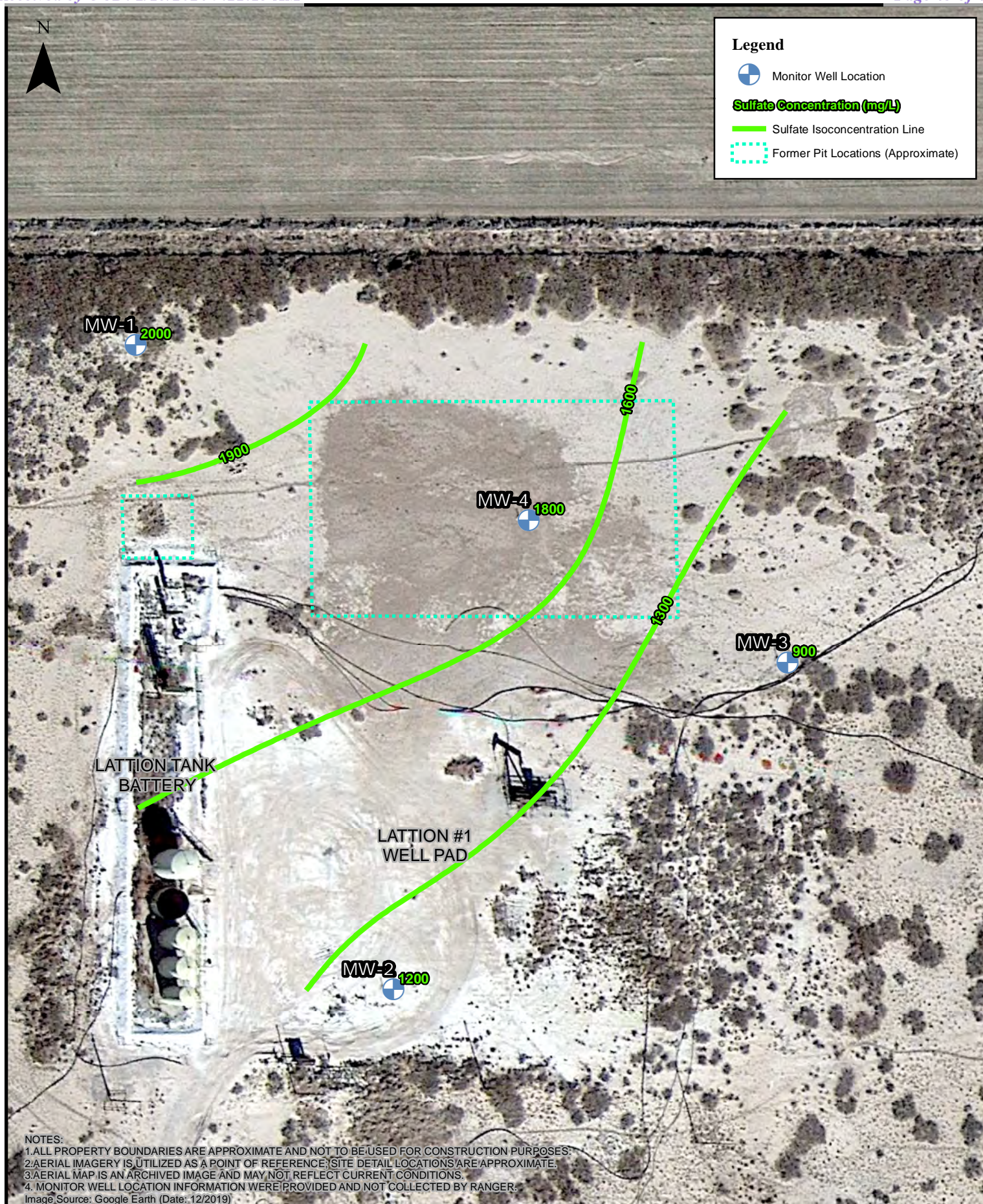


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1:775

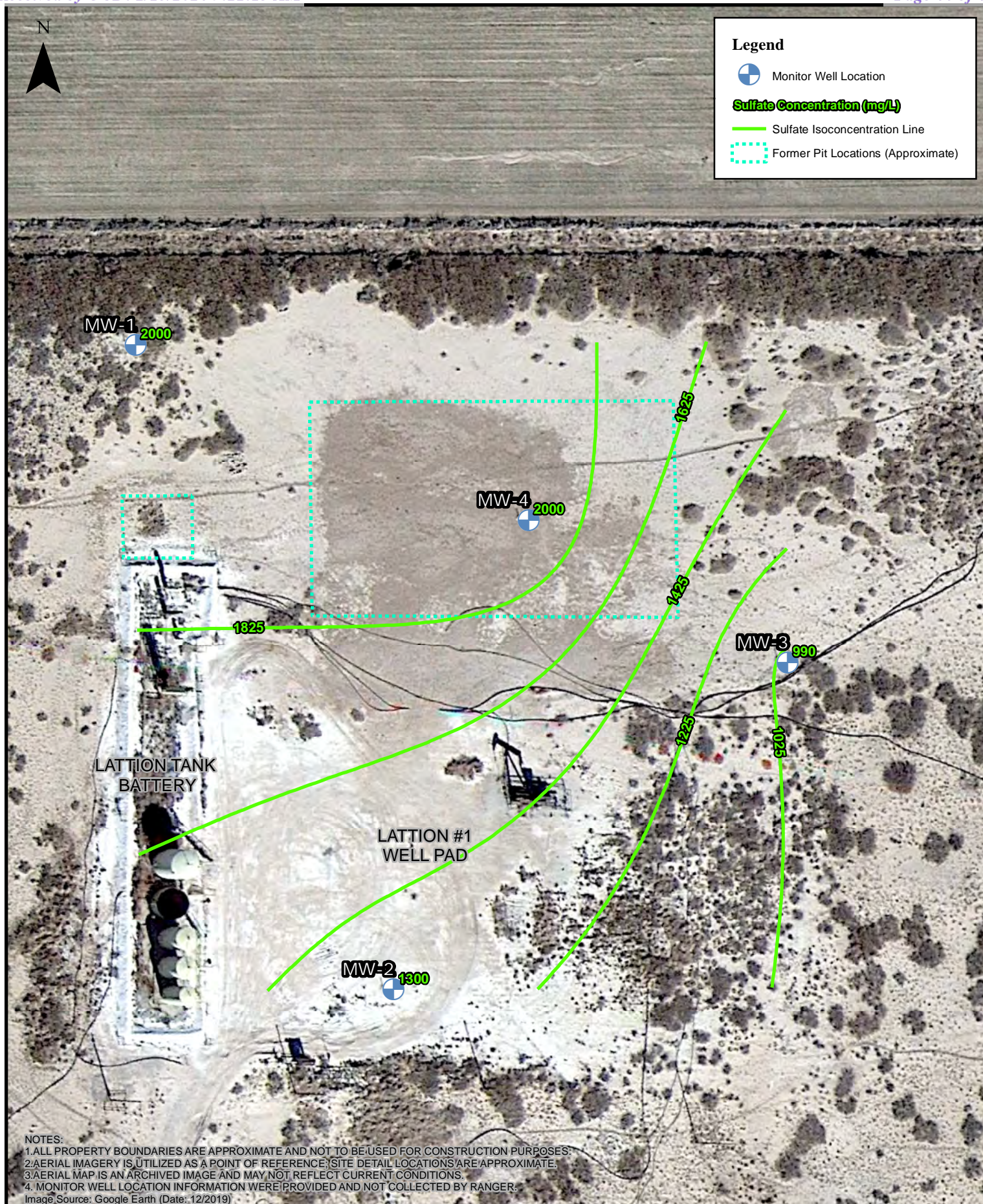
**Sulfate Isoconcentration Map**  
 (Sample Date: 03/17/2012)  
 Lattion Pit  
 EOG Resources, Inc.





**Sulfate Isoconcentration Map**  
 (Sample Date: 06/18/2012)  
 Lattion Pit  
 EOG Resources, Inc.



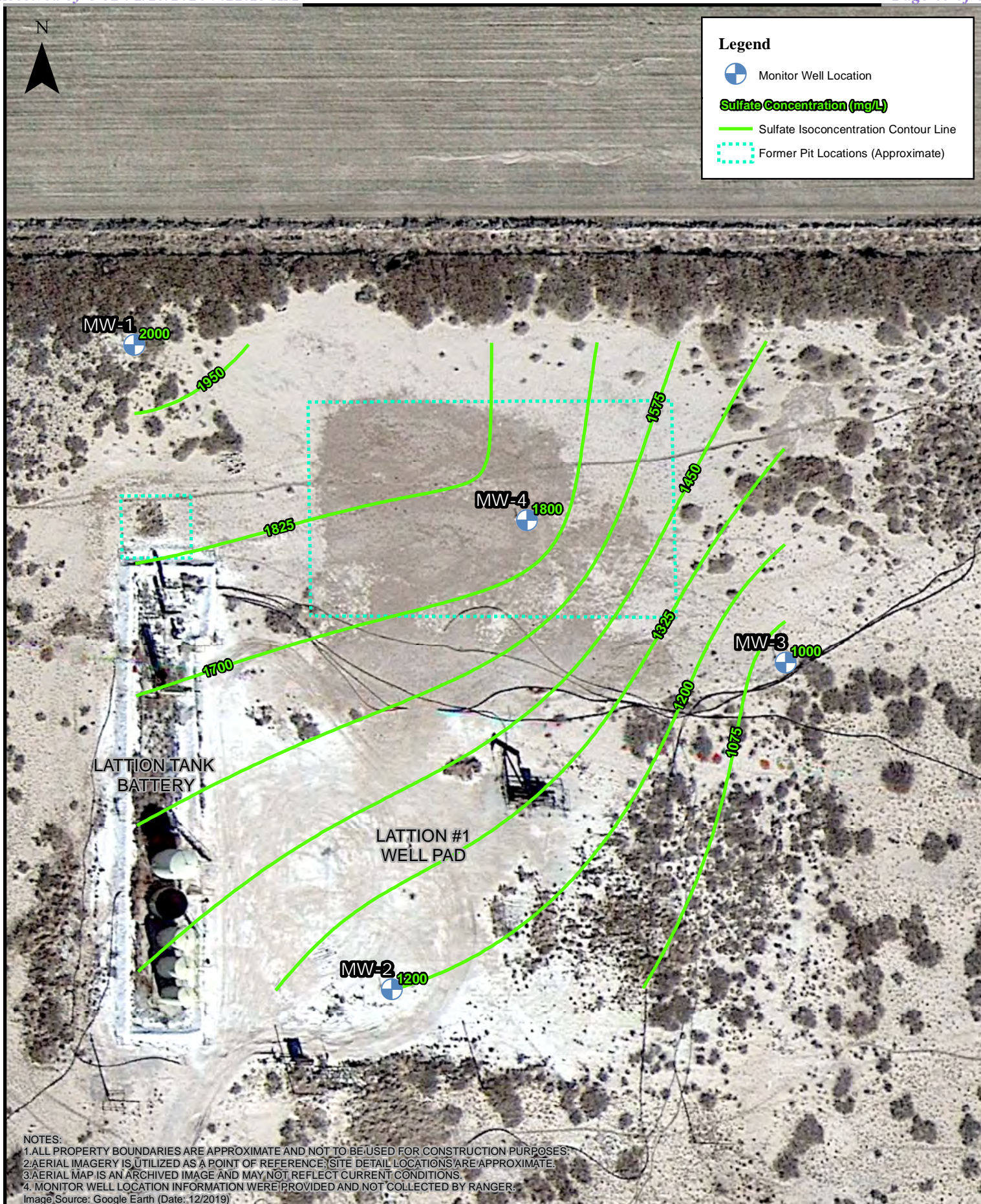


0 15 30 60 90 120 Feet

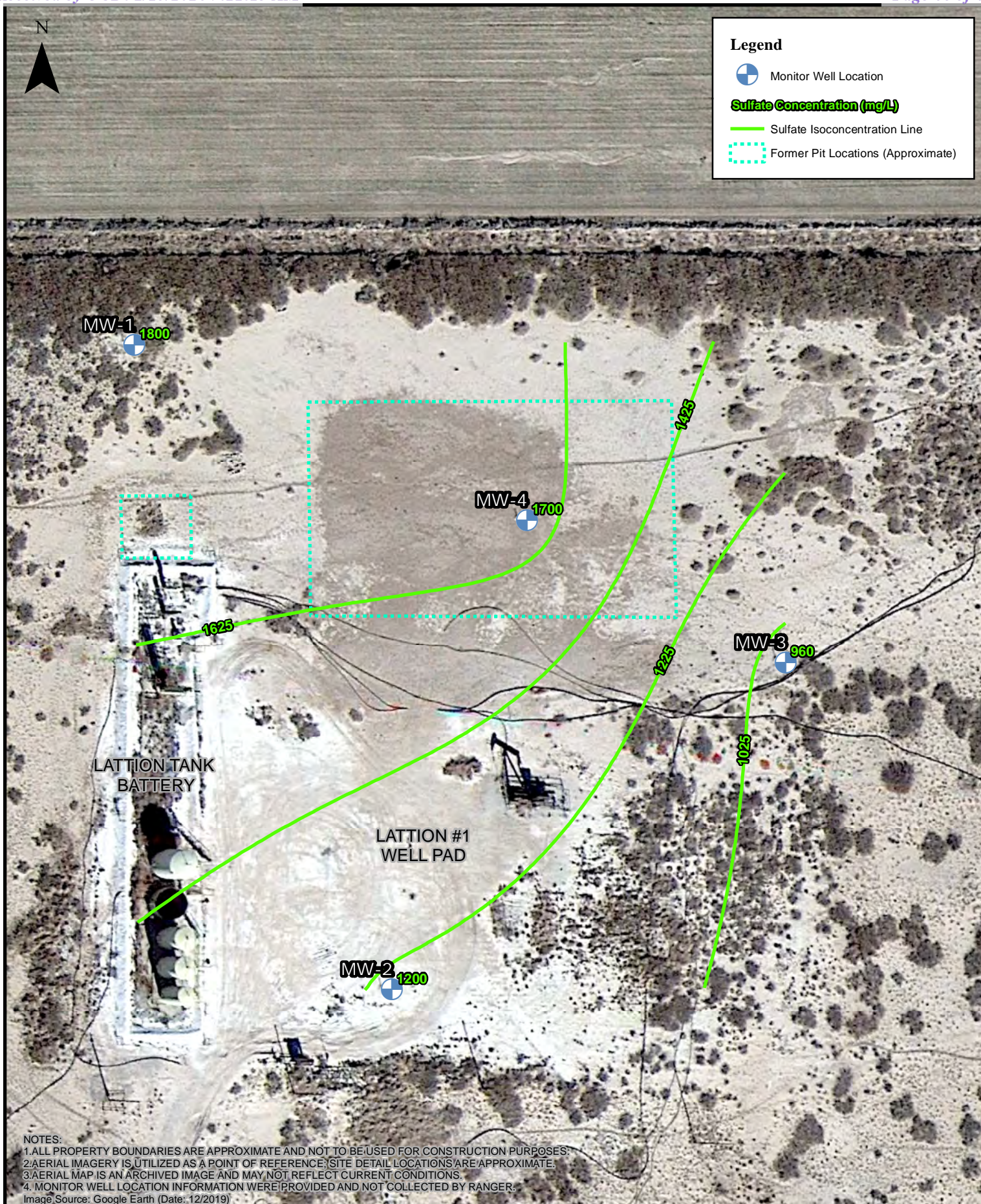
1:775

**Sulfate Isoconcentration Map**  
 (Sample Date: 09/12/2012)  
 Lattion Pit  
 EOG Resources, Inc.







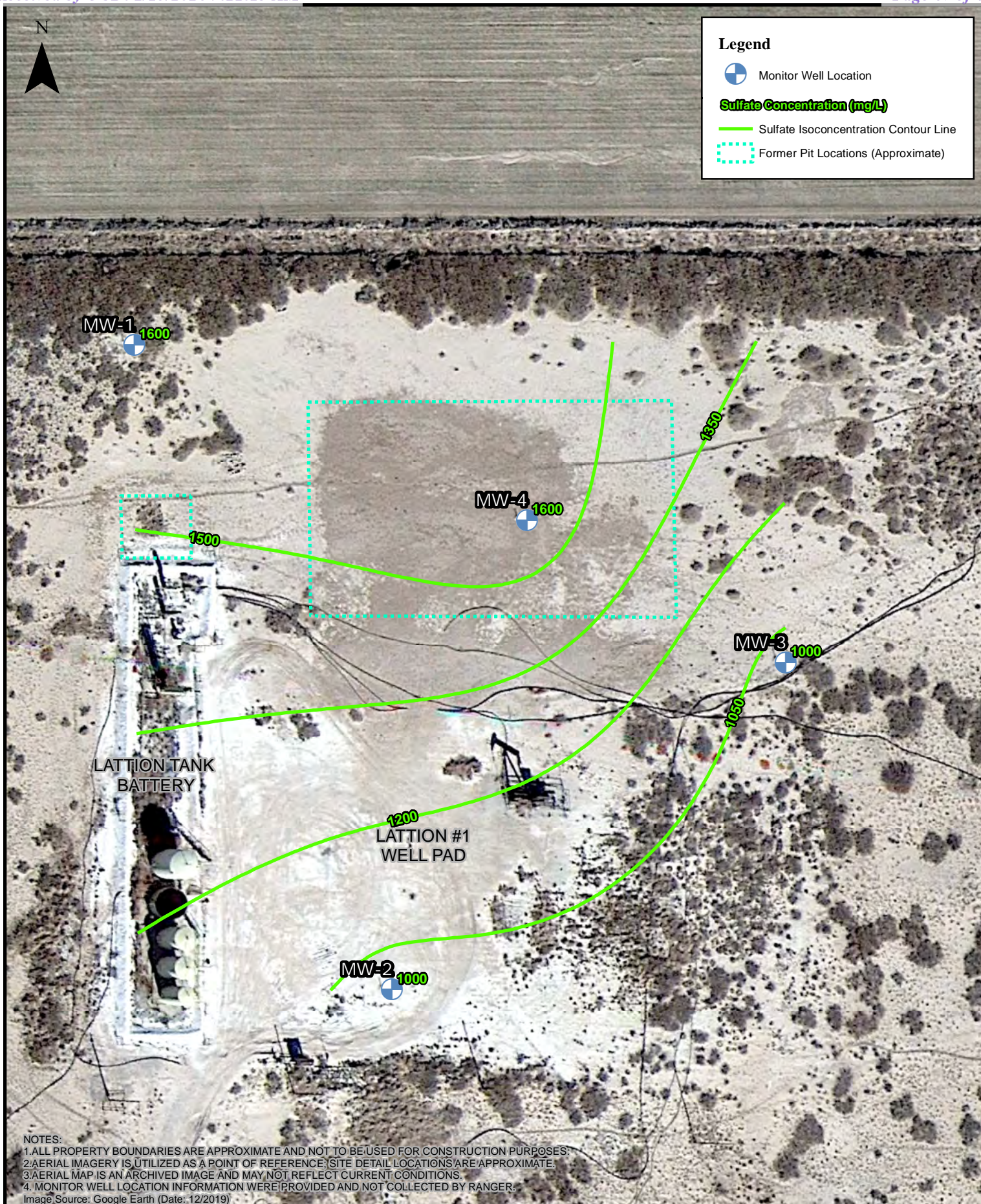


0 15 30 60 90 120 Feet

1:775

**Sulfate Isoconcentration Map**  
**(Sample Date: 03/12/2013)**  
 Lattion Pit  
 EOG Resources, Inc.



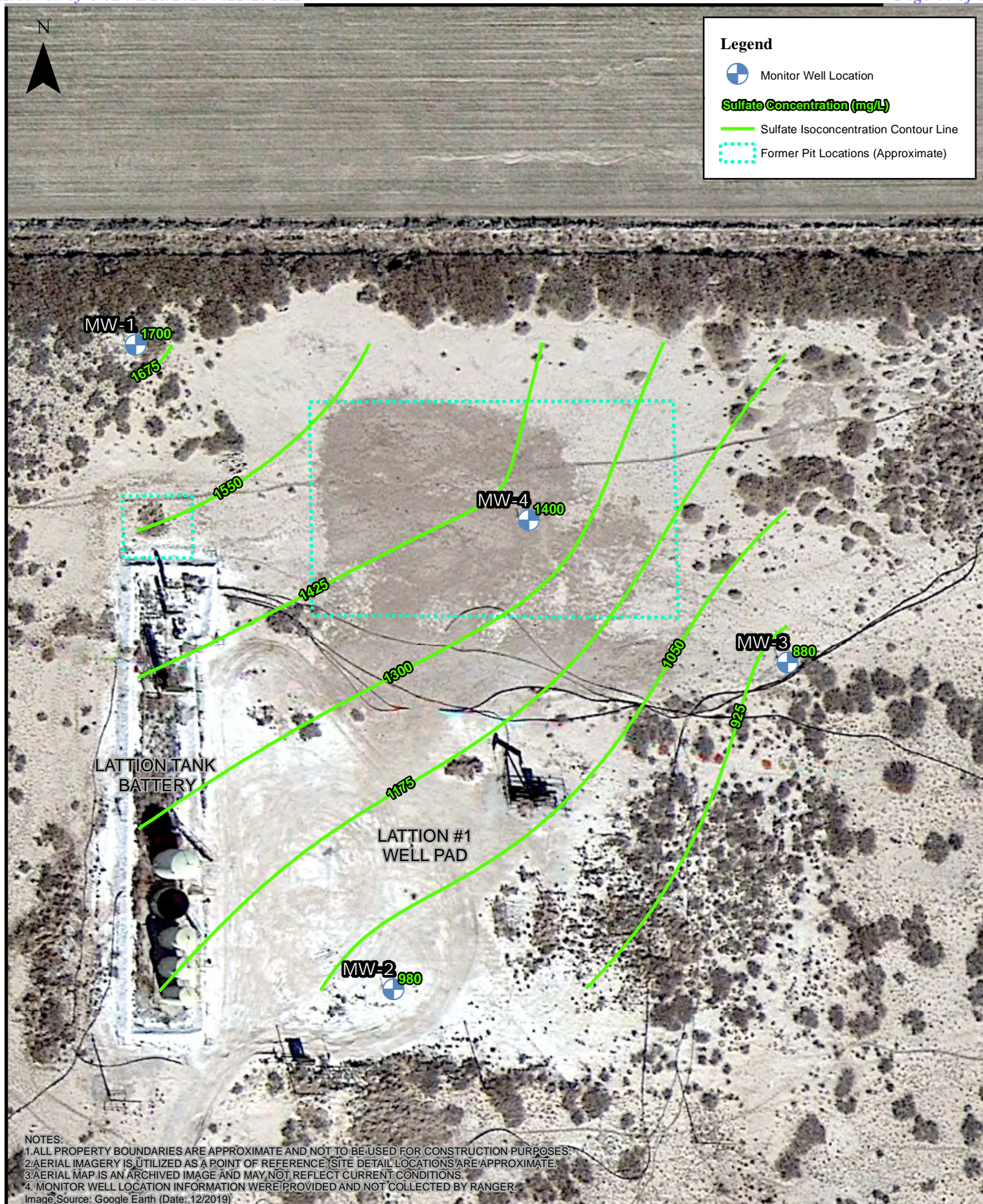


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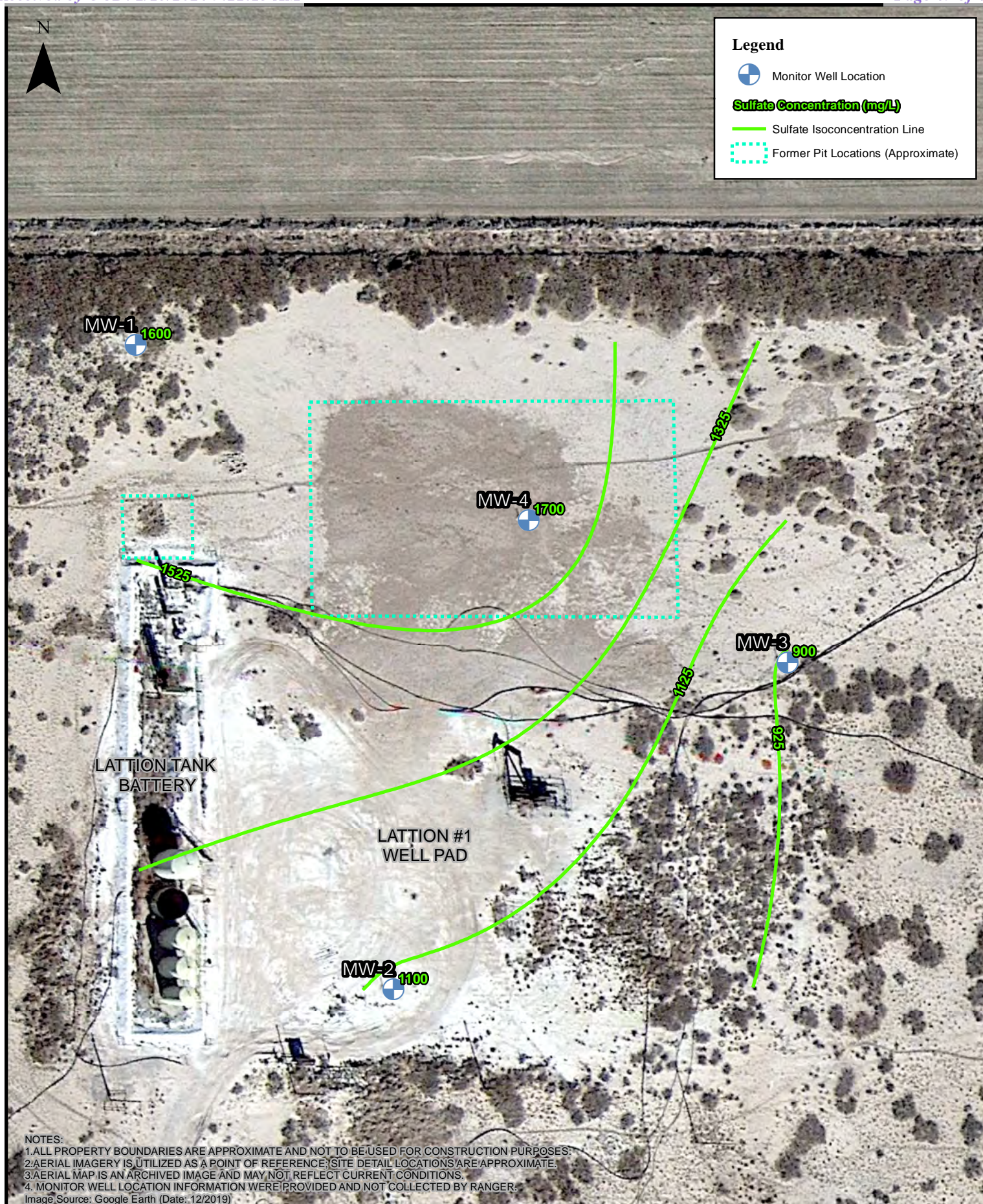
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**Sulfate Isoconcentration Map**  
 (Sample Date: 06/27/2013)  
 Lattion Pit  
 EOG Resources, Inc.







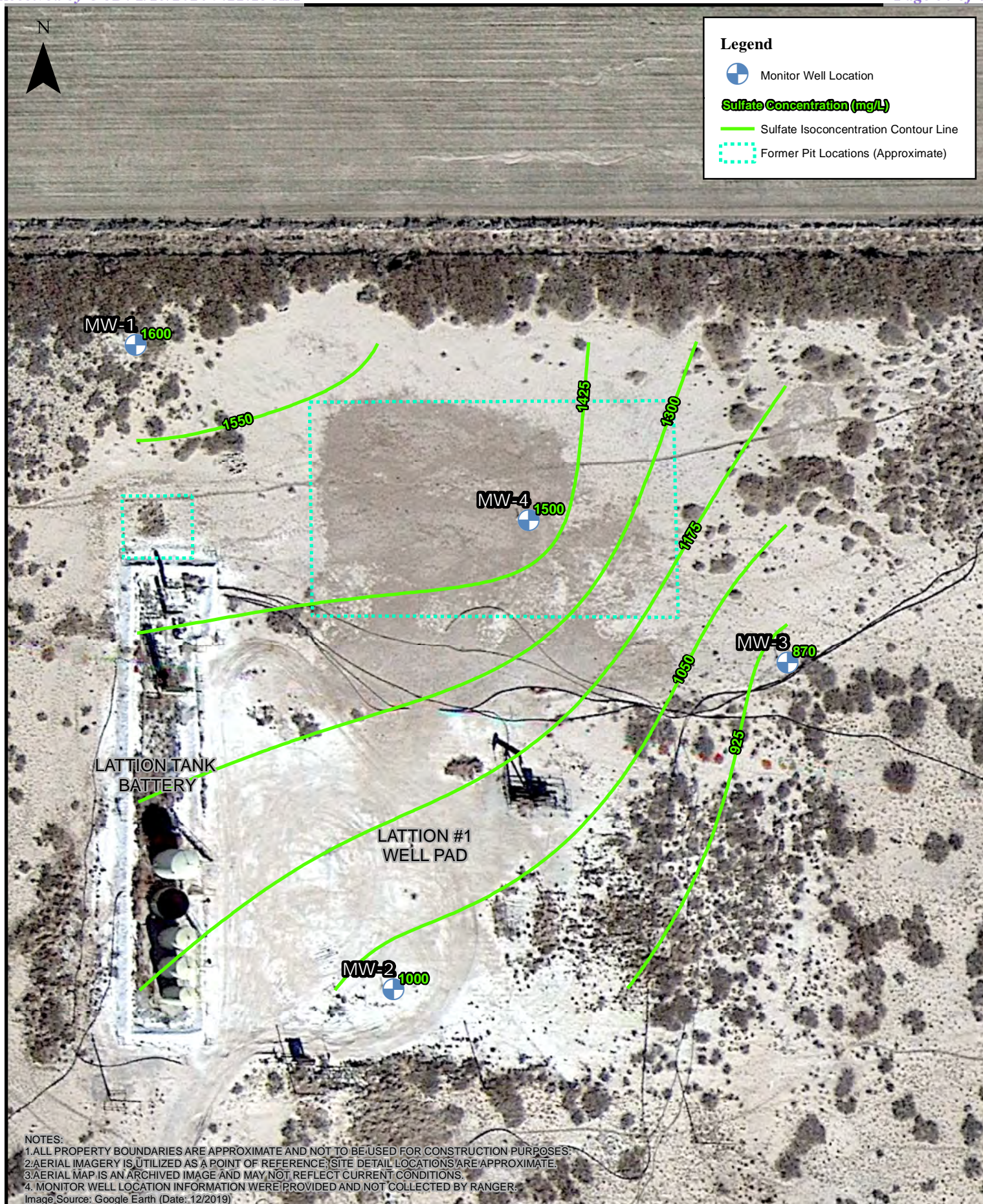


0 15 30 60 90 120 Feet

1:775

**Sulfate Isoconcentration Map**  
 (Sample Date: 03/21/2019)  
 Lattion Pit  
 EOG Resources, Inc.



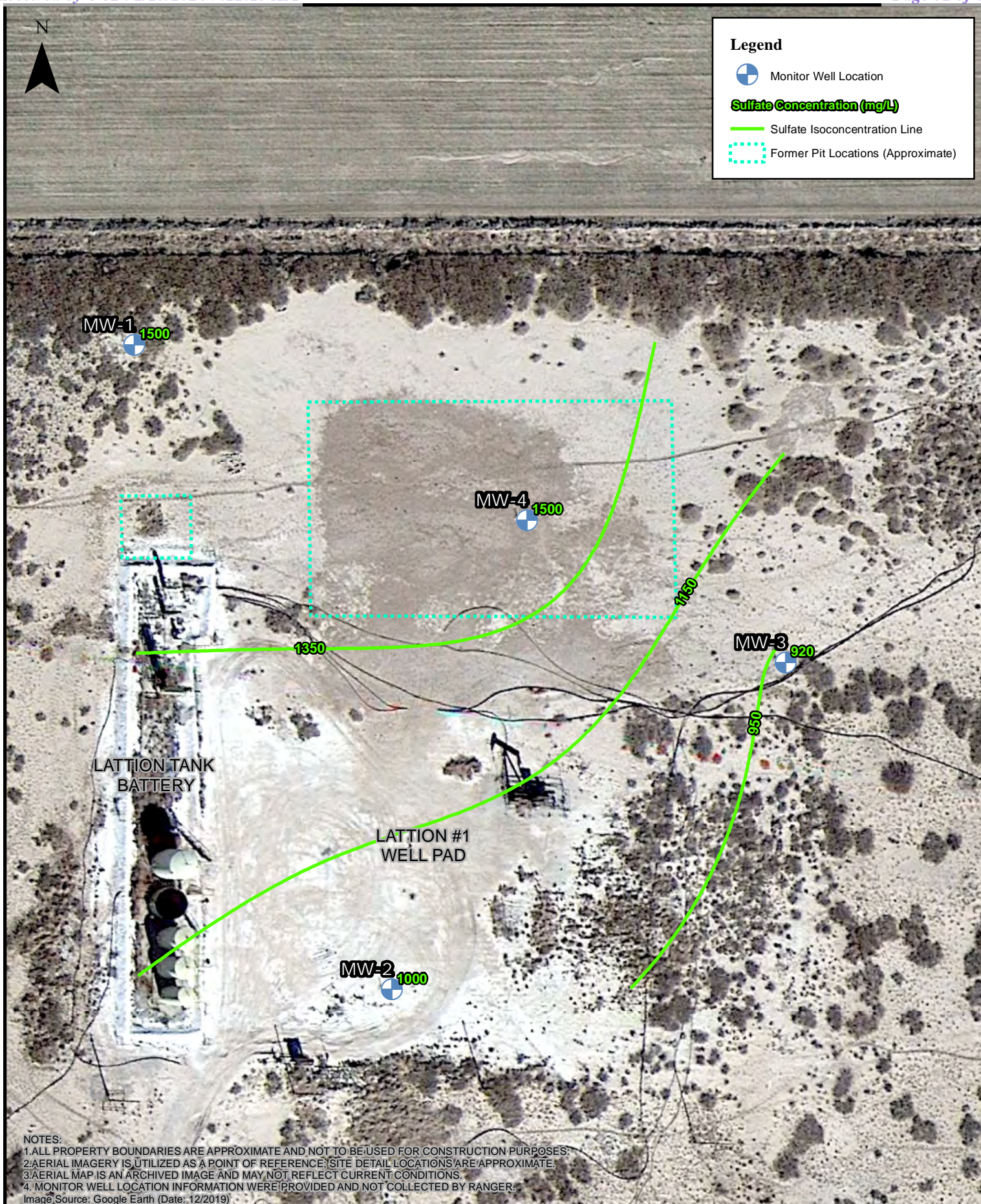


0 15 30 60 90 120 Feet

1:775

**Sulfate Isoconcentration Map**  
**(Sample Date: 10/28/2019)**  
 Lattion Pit  
 EOG Resources, Inc.



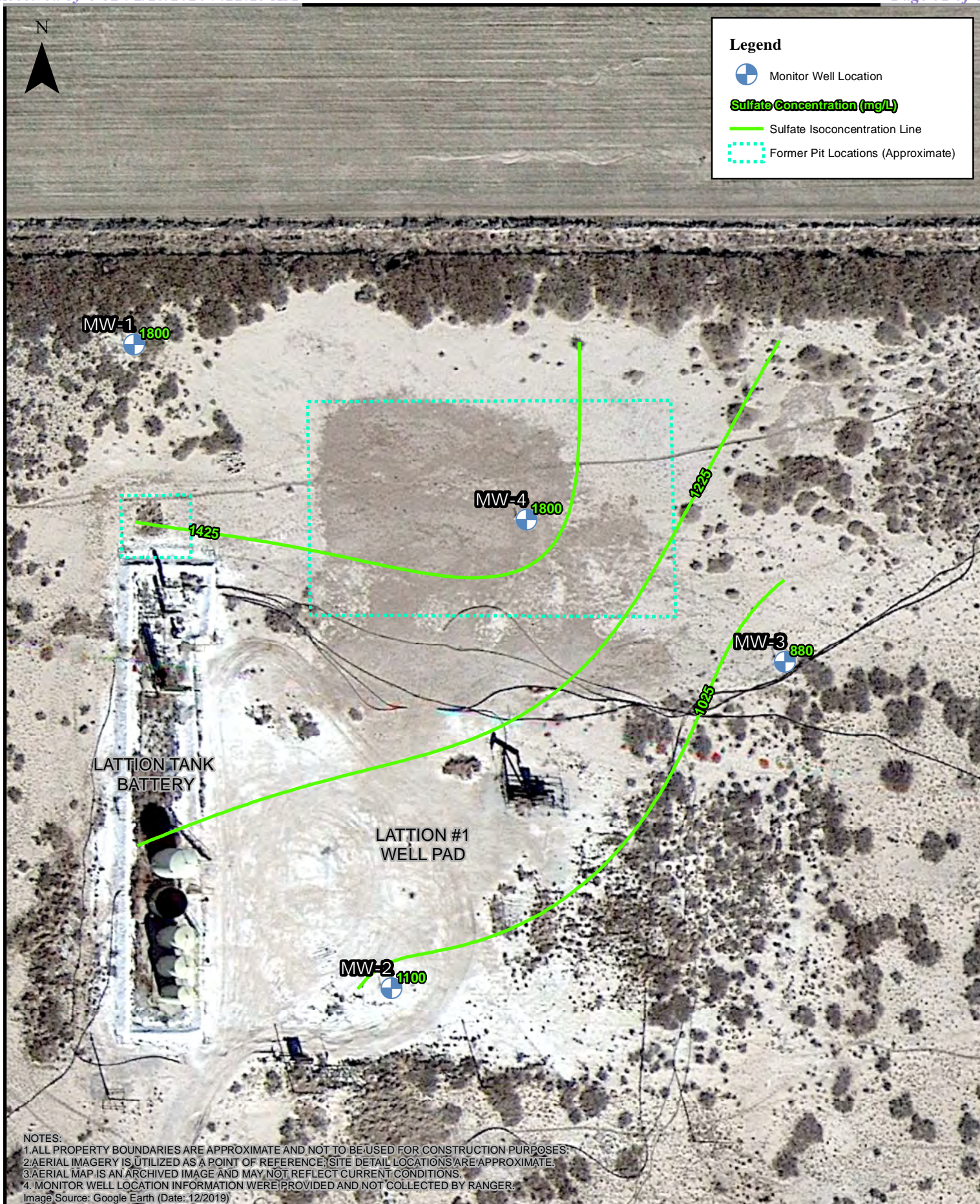


0 15 30 60 90 120 Feet

1:775

**Sulfate Isoconcentration Map**  
 (Sample Date: 09/17/2020)  
 Lattion Pit  
 EOG Resources, Inc.



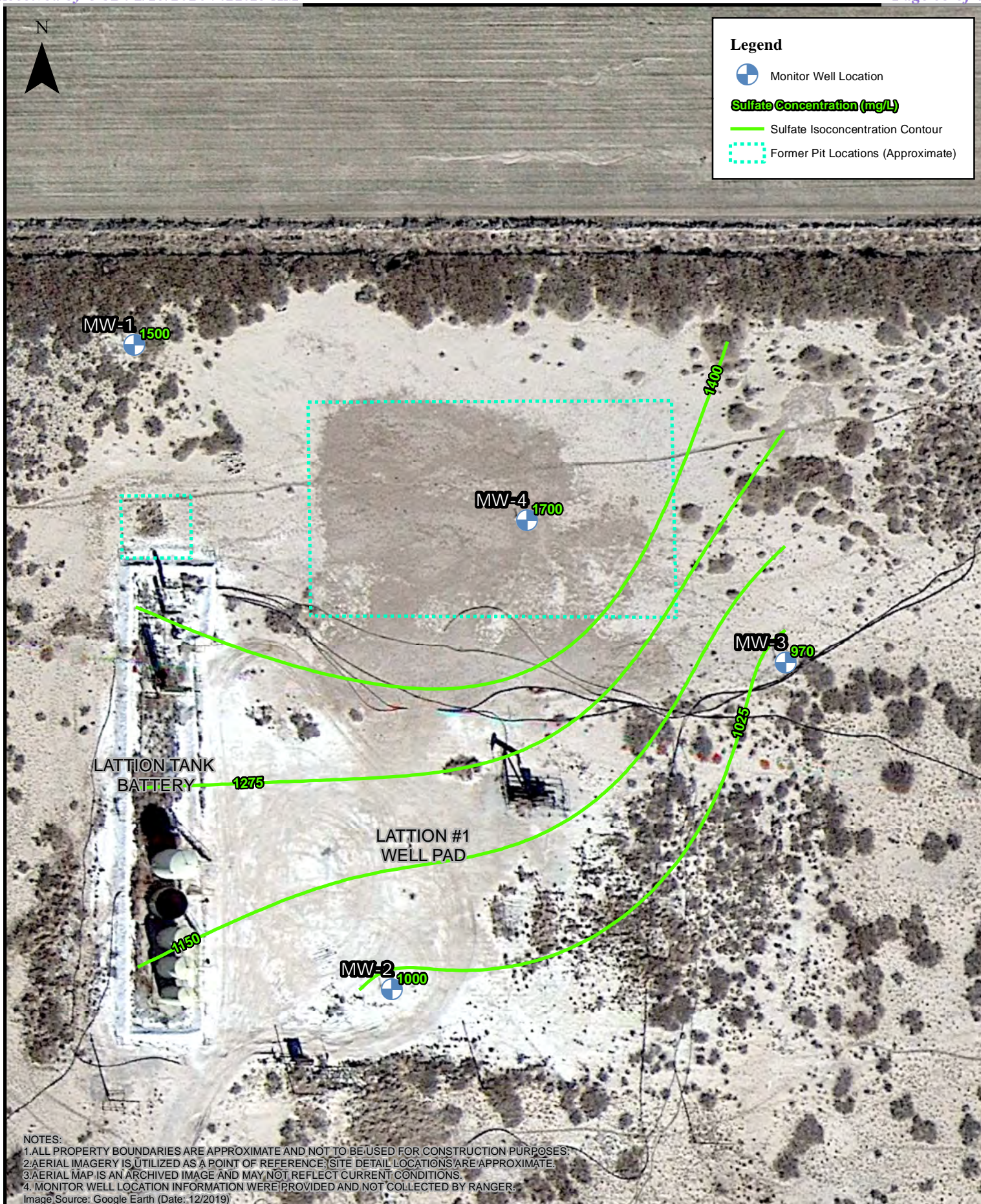


0 15 30 60 90 120 Feet

1:775

**Sulfate Isoconcentration Map**  
 (Sample Date: 08/17/2021)  
 Lattion Pit  
 EOG Resources, Inc.



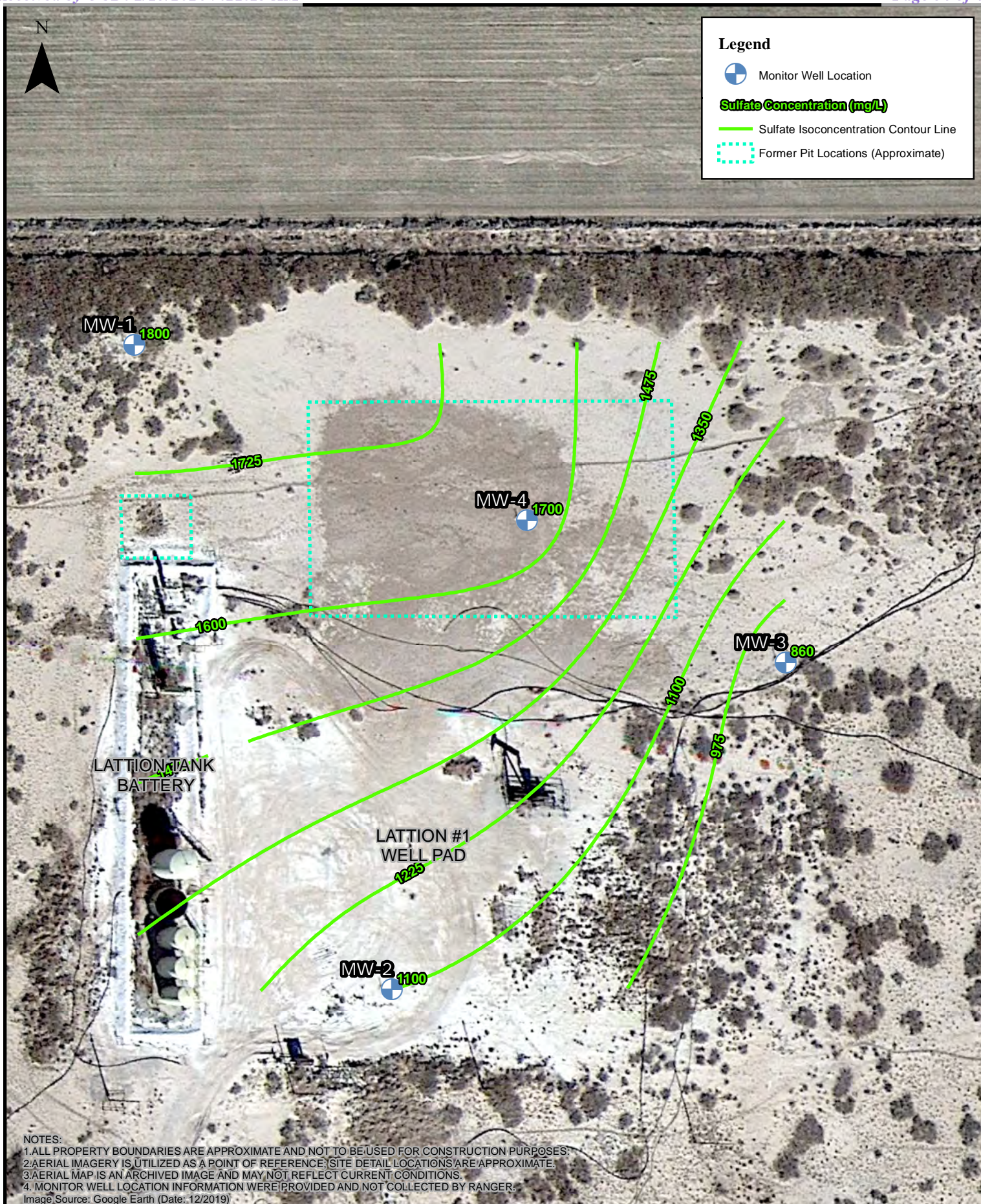


0 15 30 60 90 120 Feet

1:775

**Sulfate Isoconcentration Map**  
 (Sample Date: 03/21/2022)  
 Lattion Pit  
 EOG Resources, Inc.



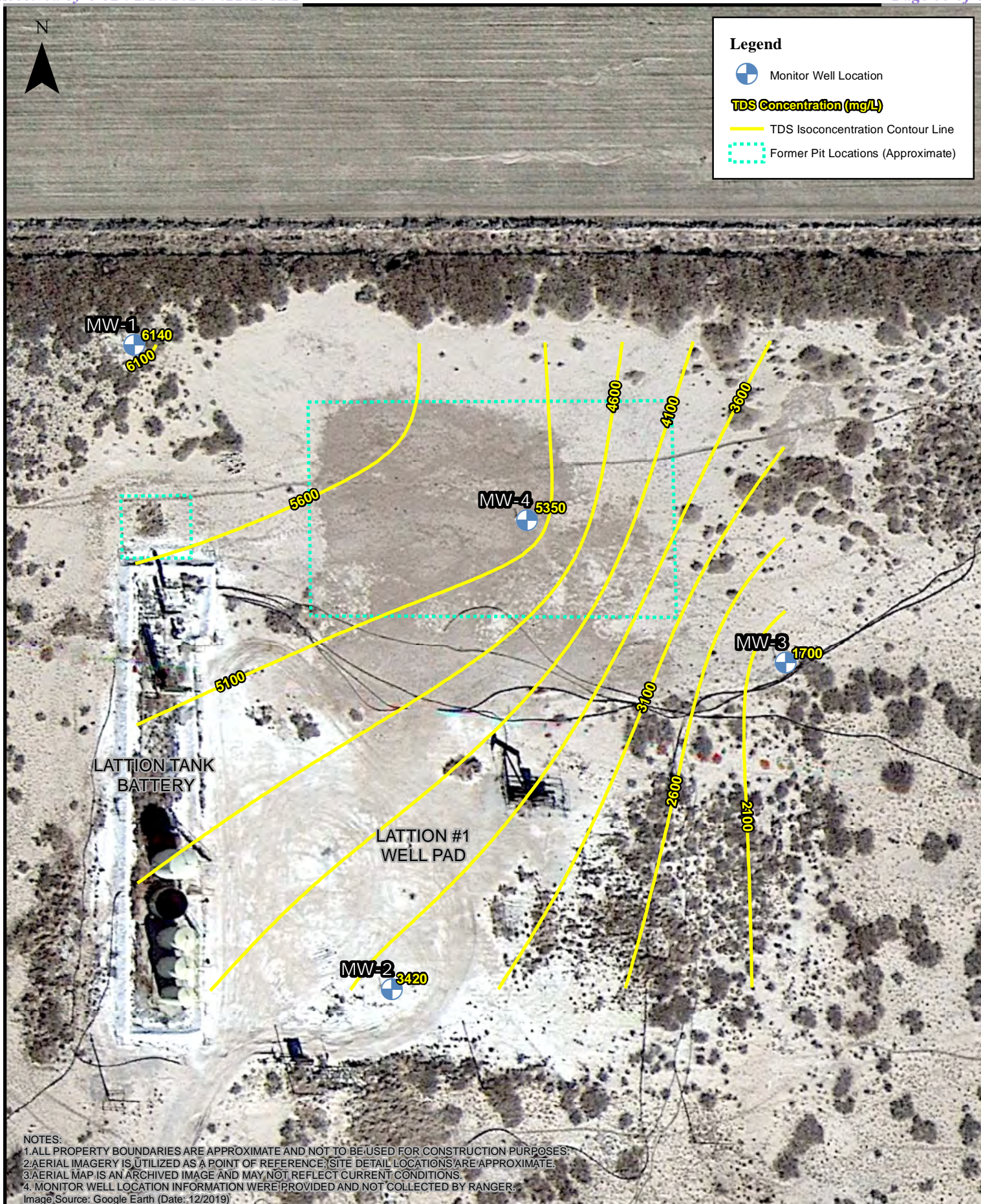


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1:775

**Sulfate Isoconcentration Map**  
 (Sample Date: 08/04/2022)  
 Lattion Pit  
 EOG Resources, Inc.



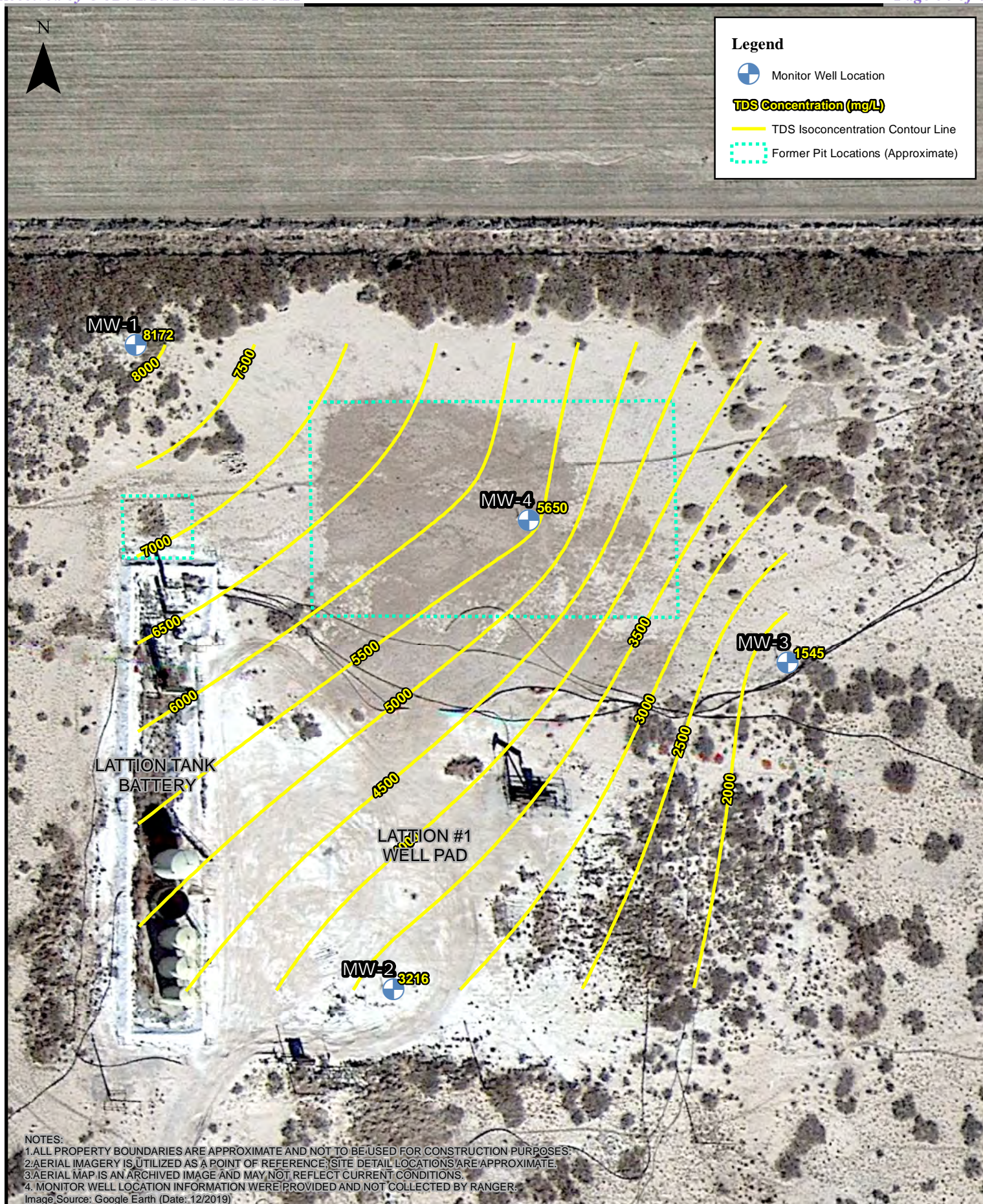


0 15 30 60 90 120 Feet

1:775

**Total Dissolved Solid Isoconcentration Map**  
 (Sample Date: 09/19/2002)  
 Lattion Pit  
 EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

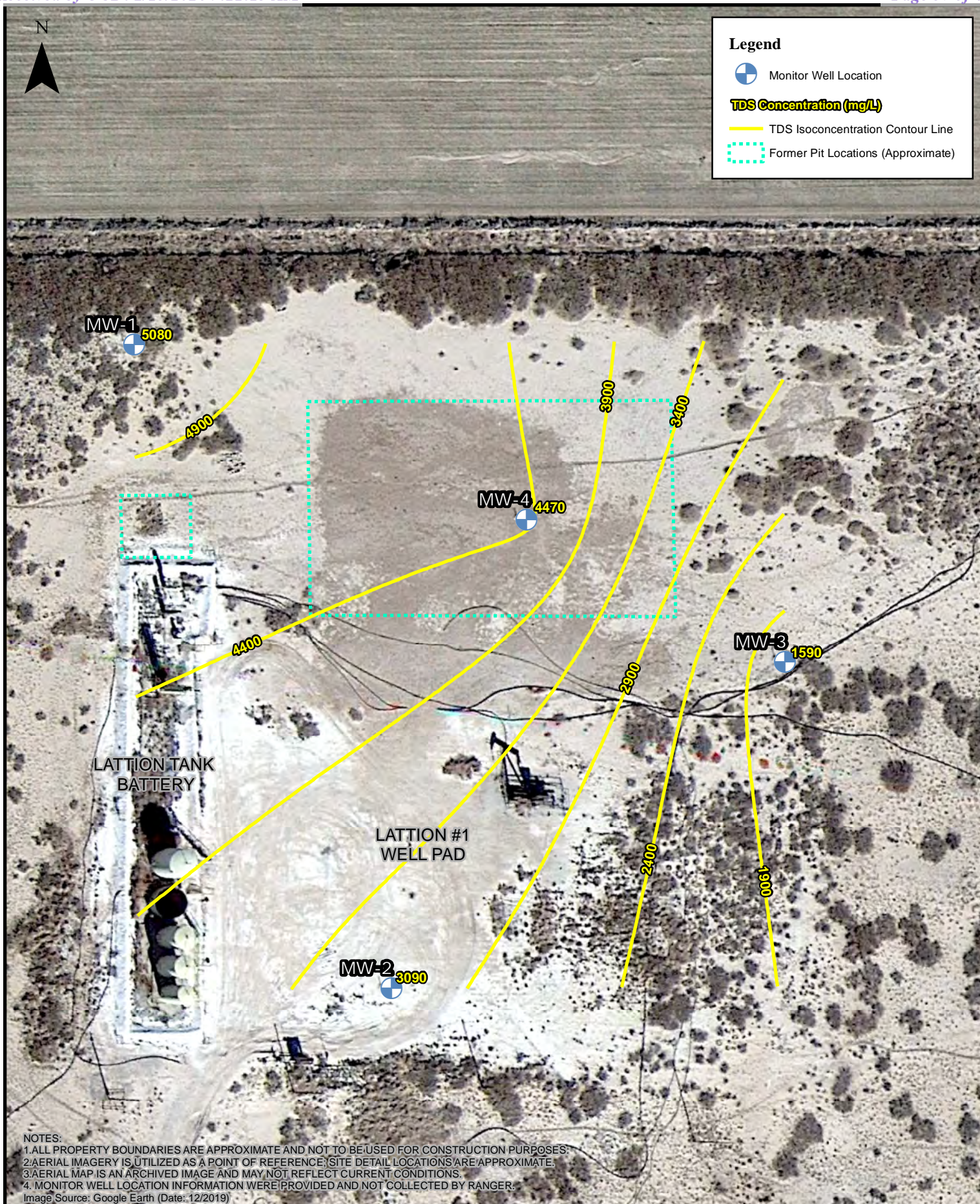
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 11/03/2004)

Lattion Pit

EOG Resources, Inc.



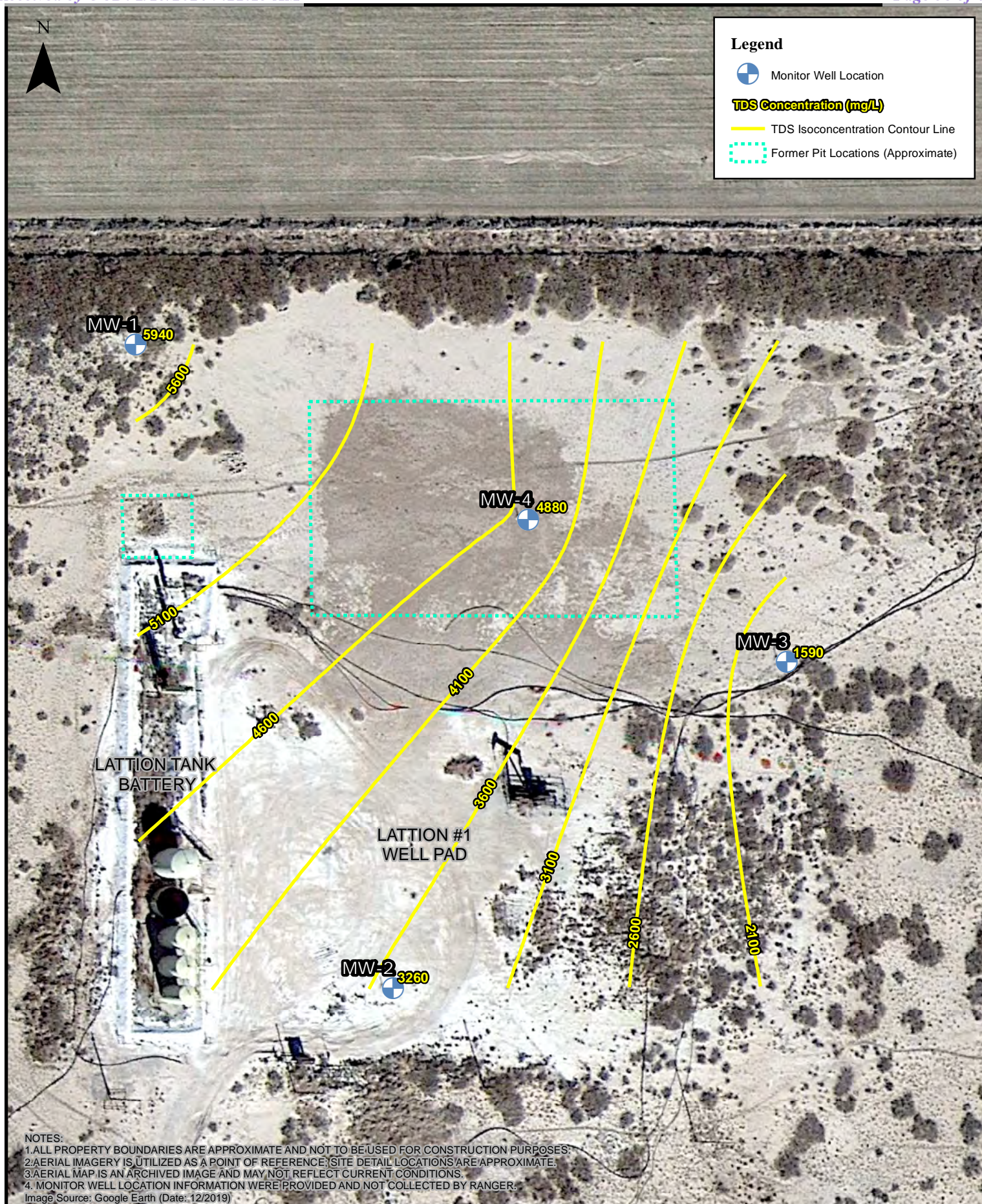


0 15 30 60 90 120 Feet

1:775

**Total Dissolved Solid Isoconcentration Map**  
 (Sample Date: 03/17/2012)  
 Lattion Pit  
 EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

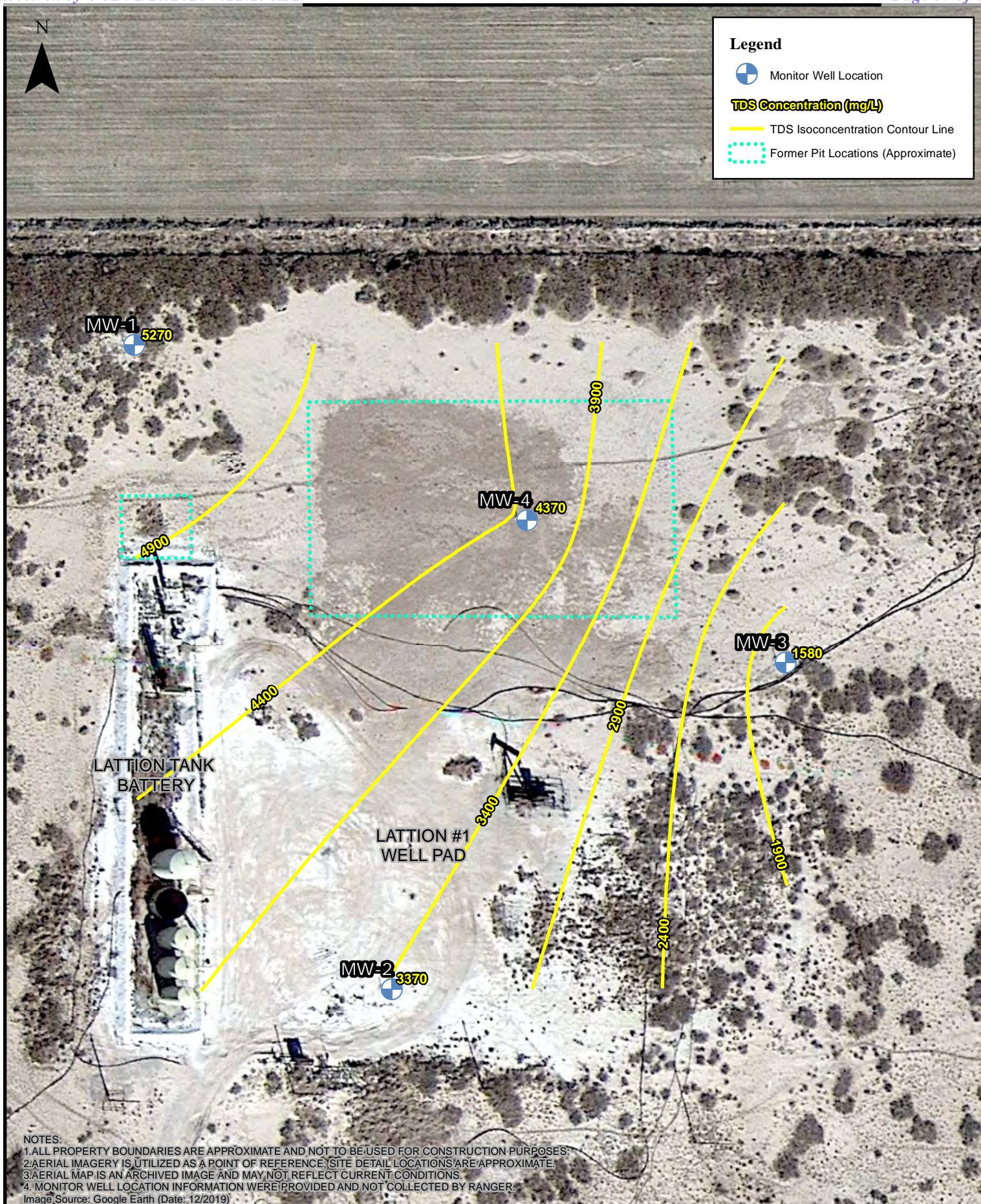
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 06/18/2012)

Lattion Pit

EOG Resources, Inc.



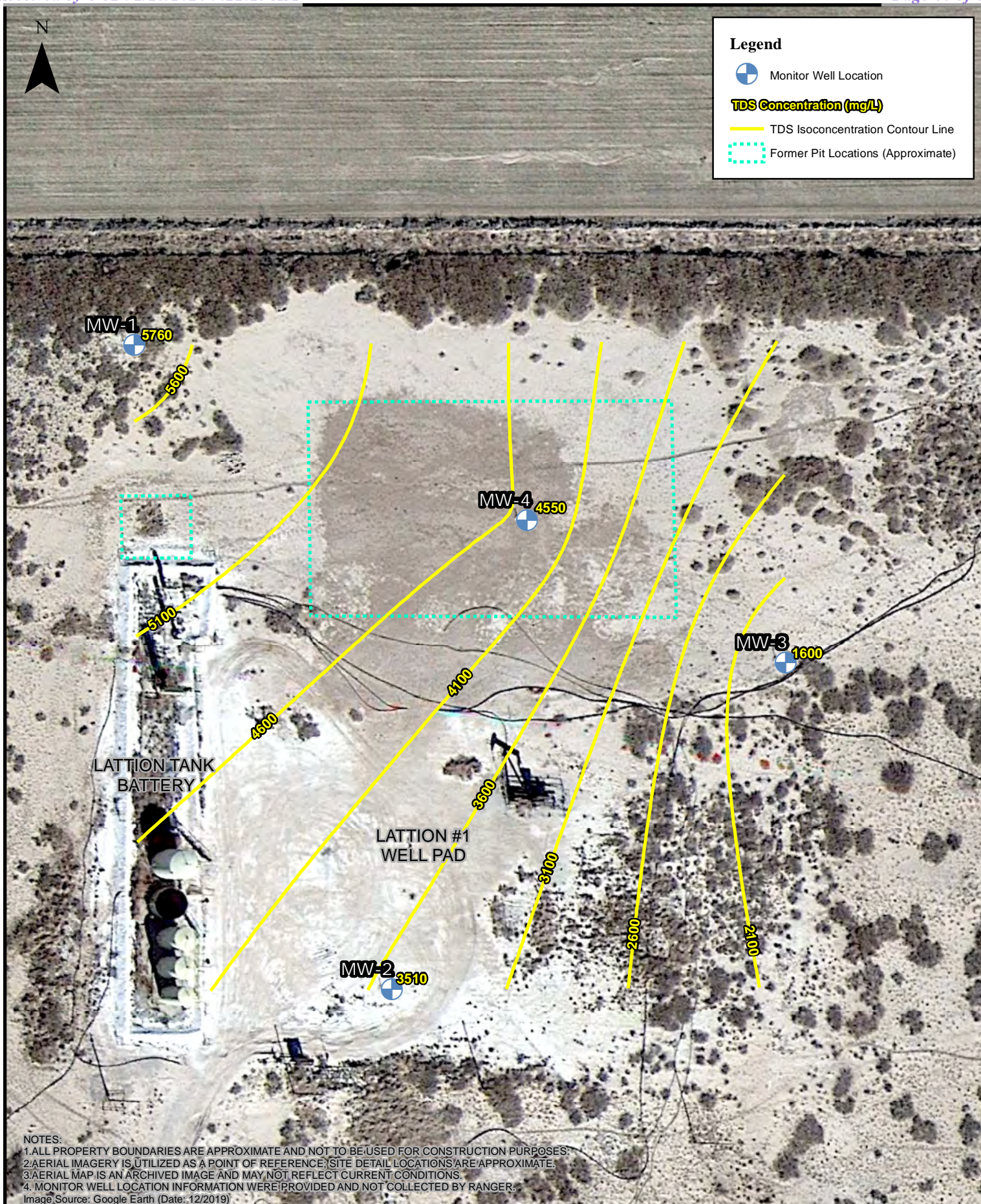


0 15 30 60 90 120 Feet

1:775

**Total Dissolved Solid Isoconcentration Map**  
 (Sample Date: 09/12/2012)  
 Lattion Pit  
 EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

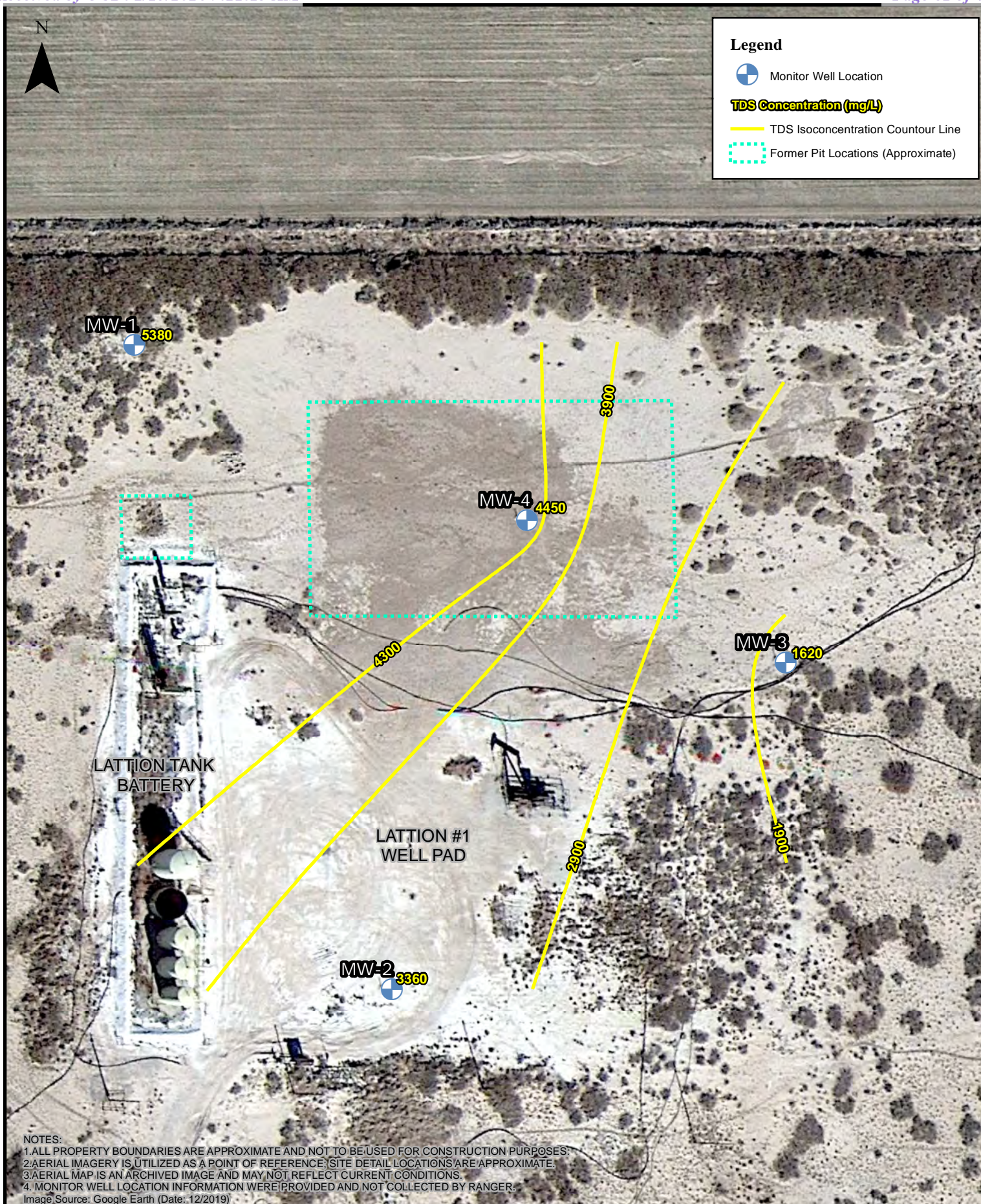
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 12/06/2012)

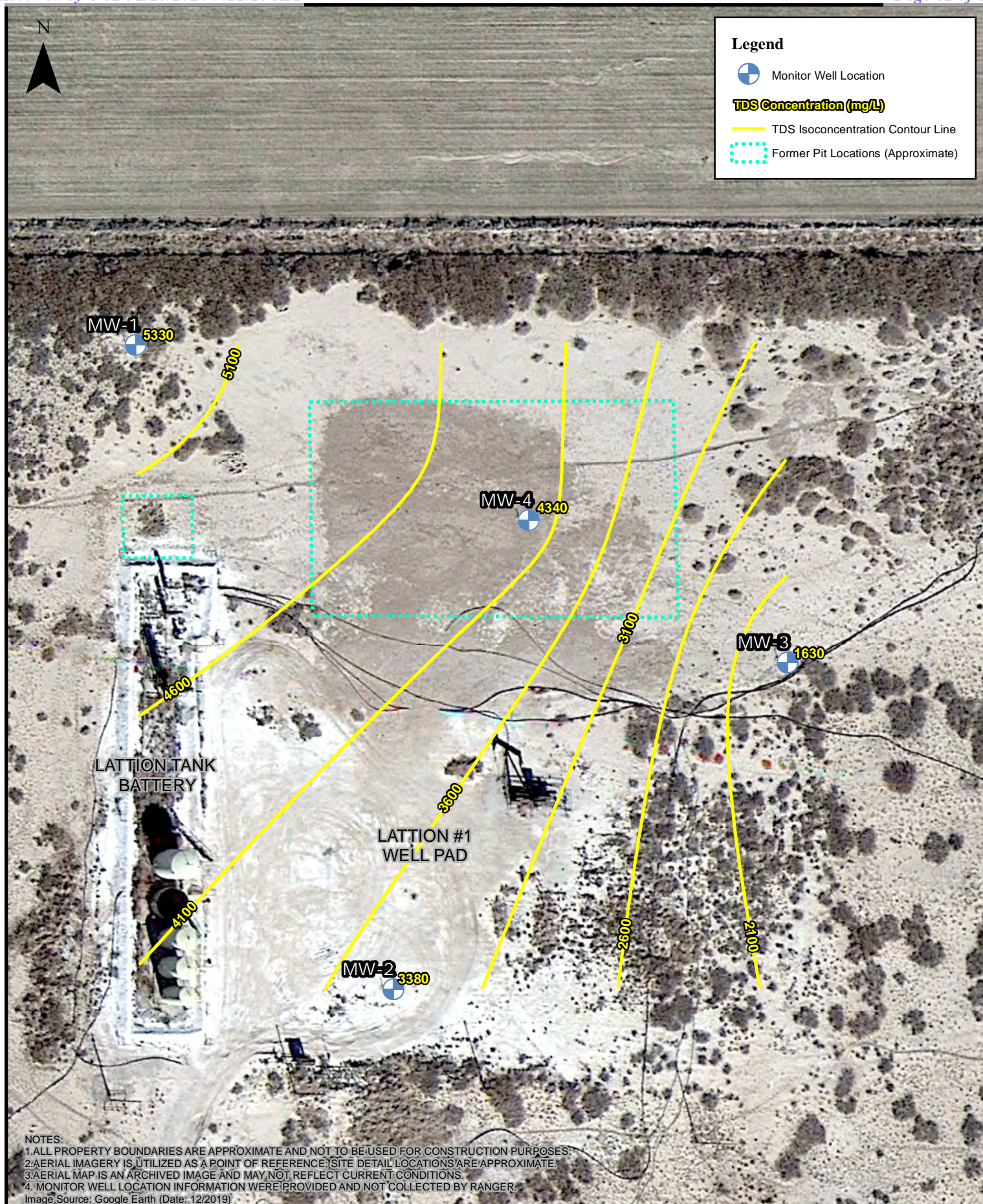
Lattion Pit

EOG Resources, Inc.









0 15 30 60 90 120 Feet

1:775

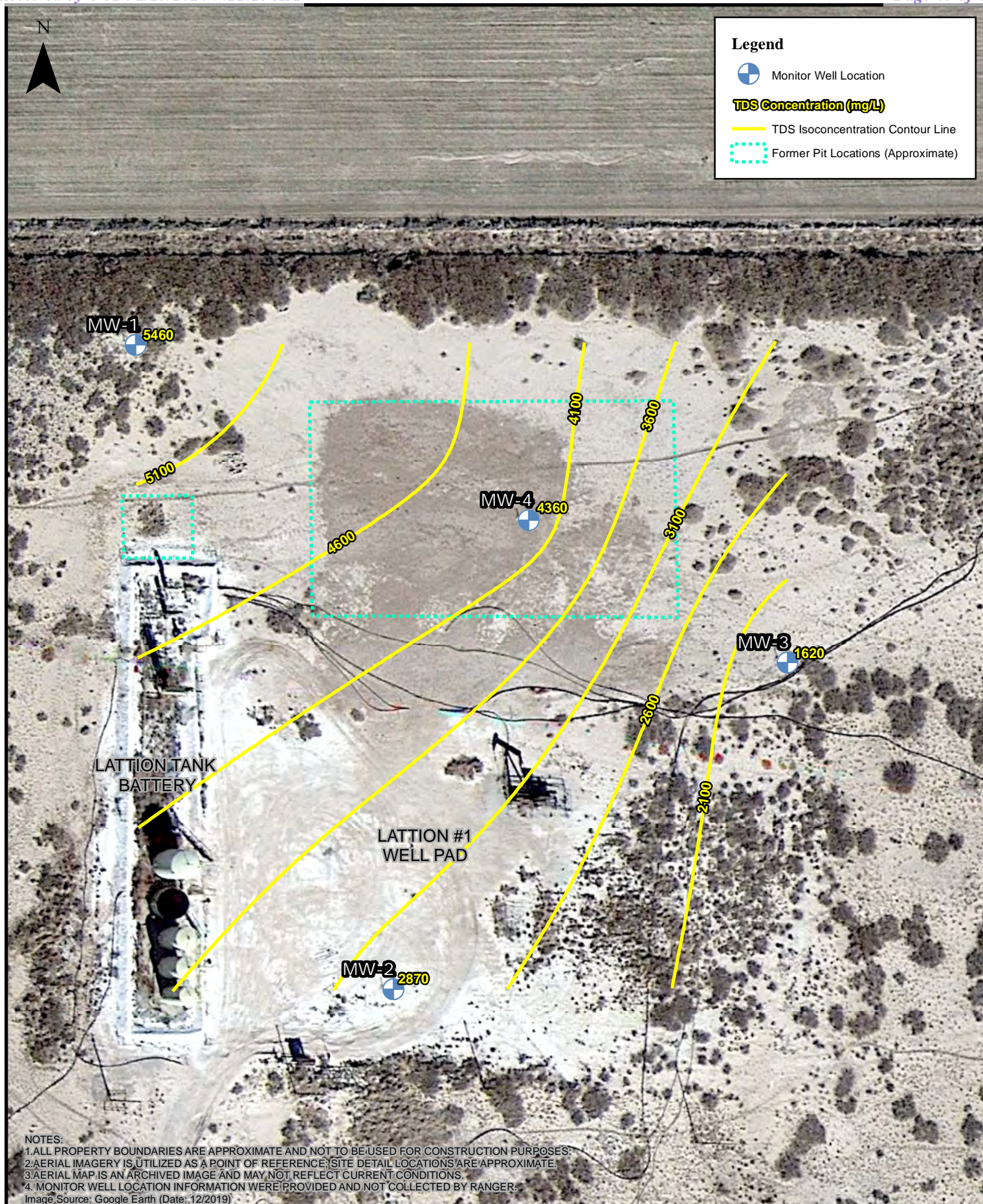
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 06/27/2013)

Lattion Pit

EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

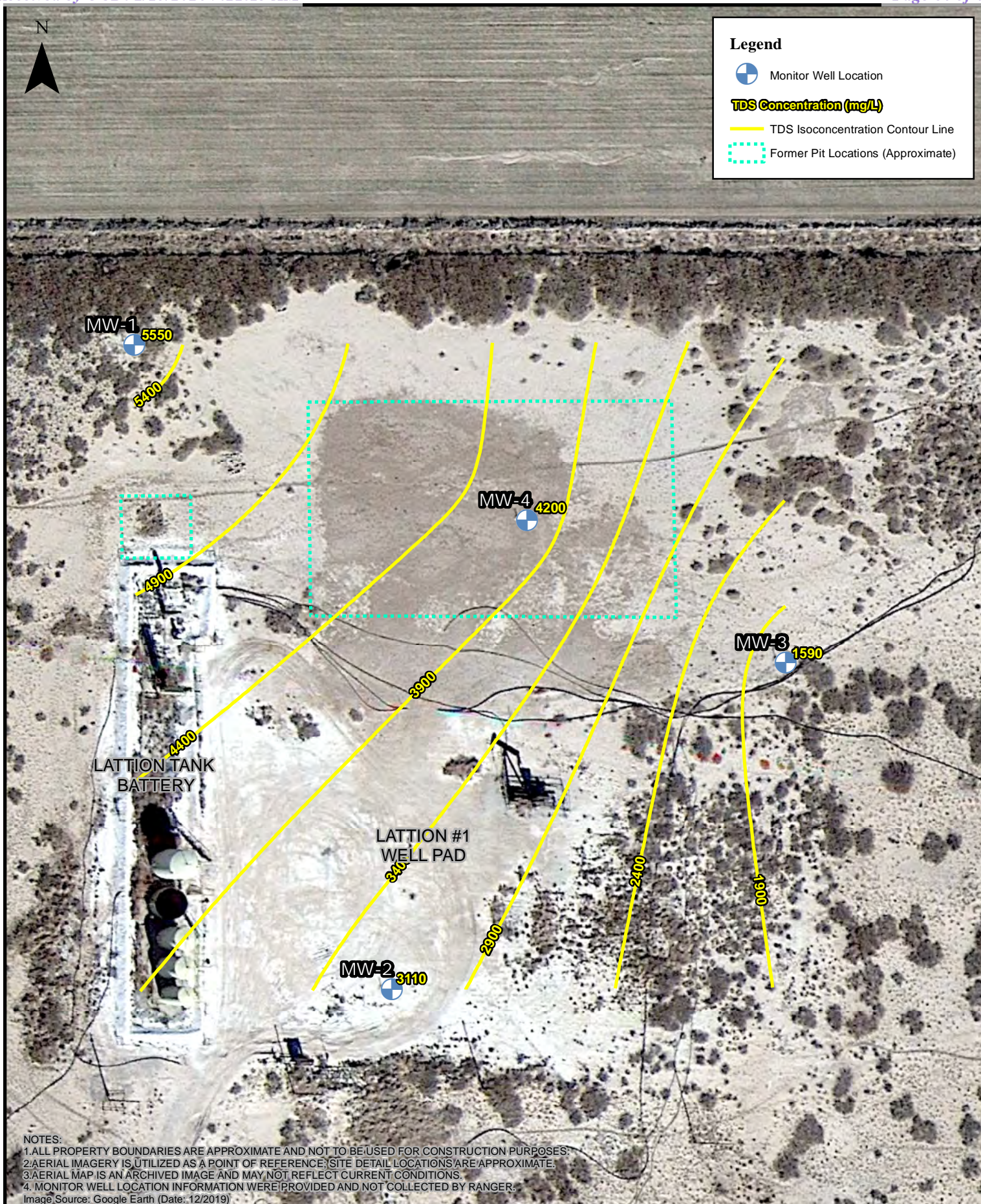
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 03/27/2018)

Lattion Pit

EOG Resources, Inc.





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1:775

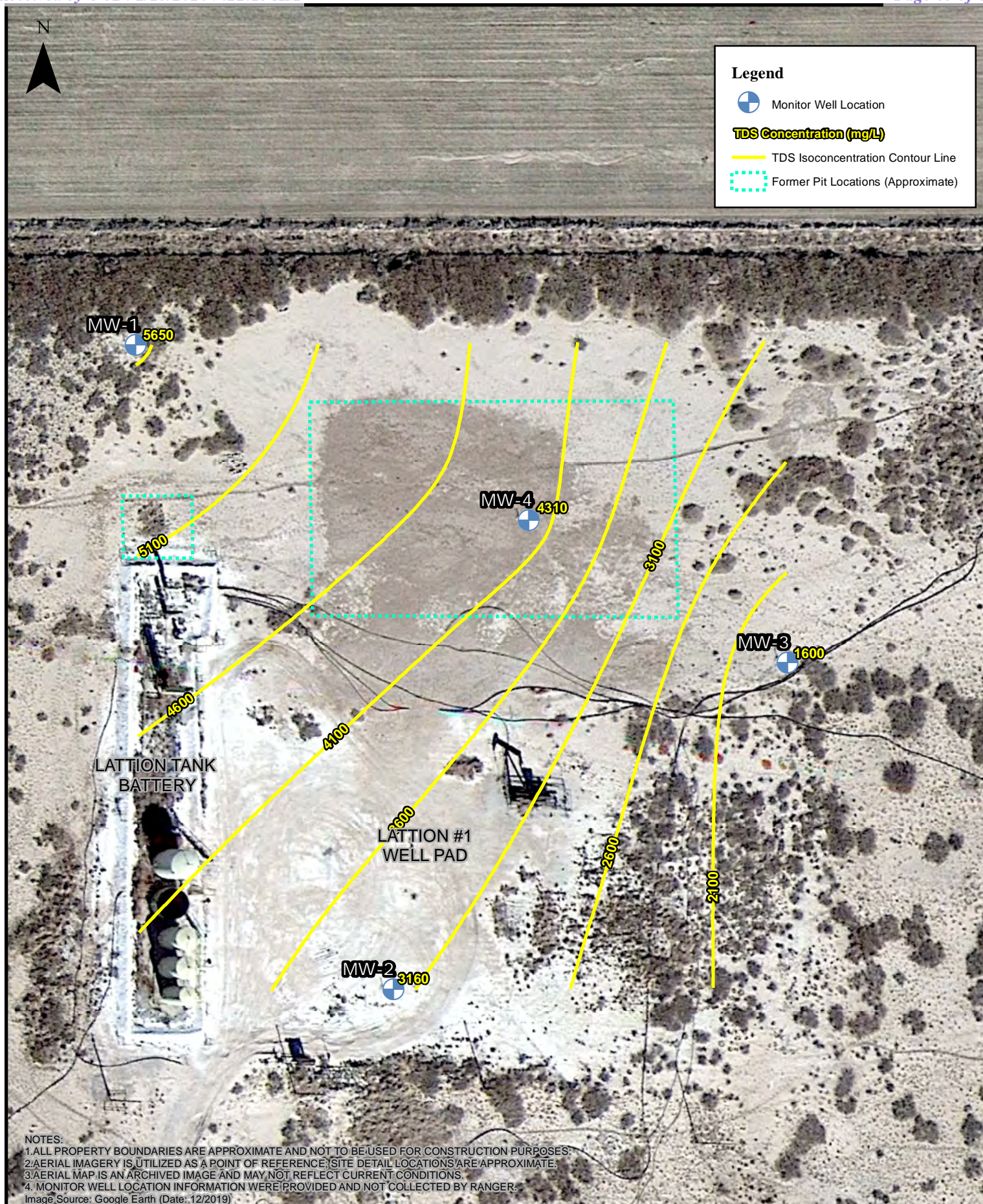
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 10/28/2019)

Lattion Pit

EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

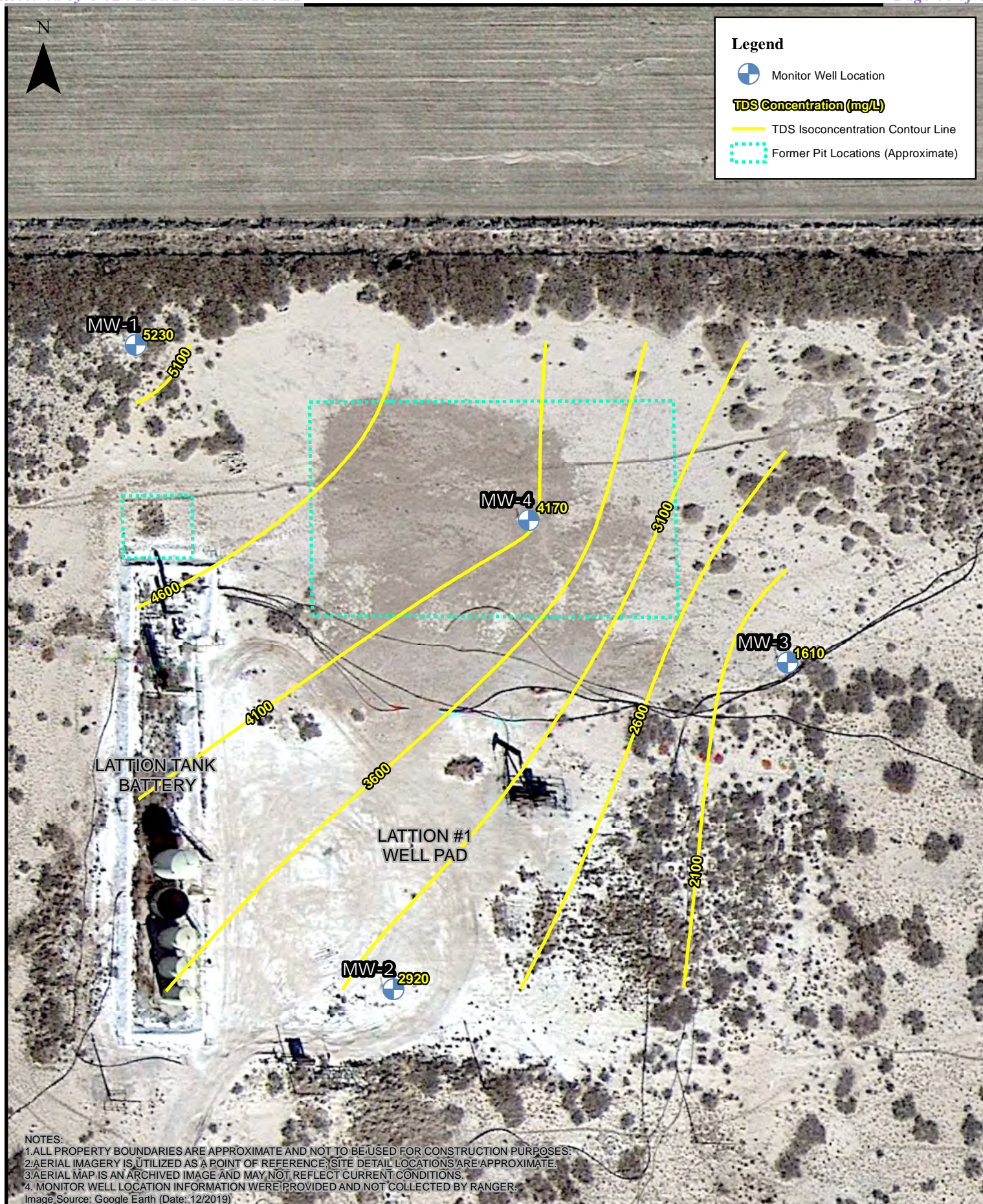
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 09/17/2020)

Lattion Pit

EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

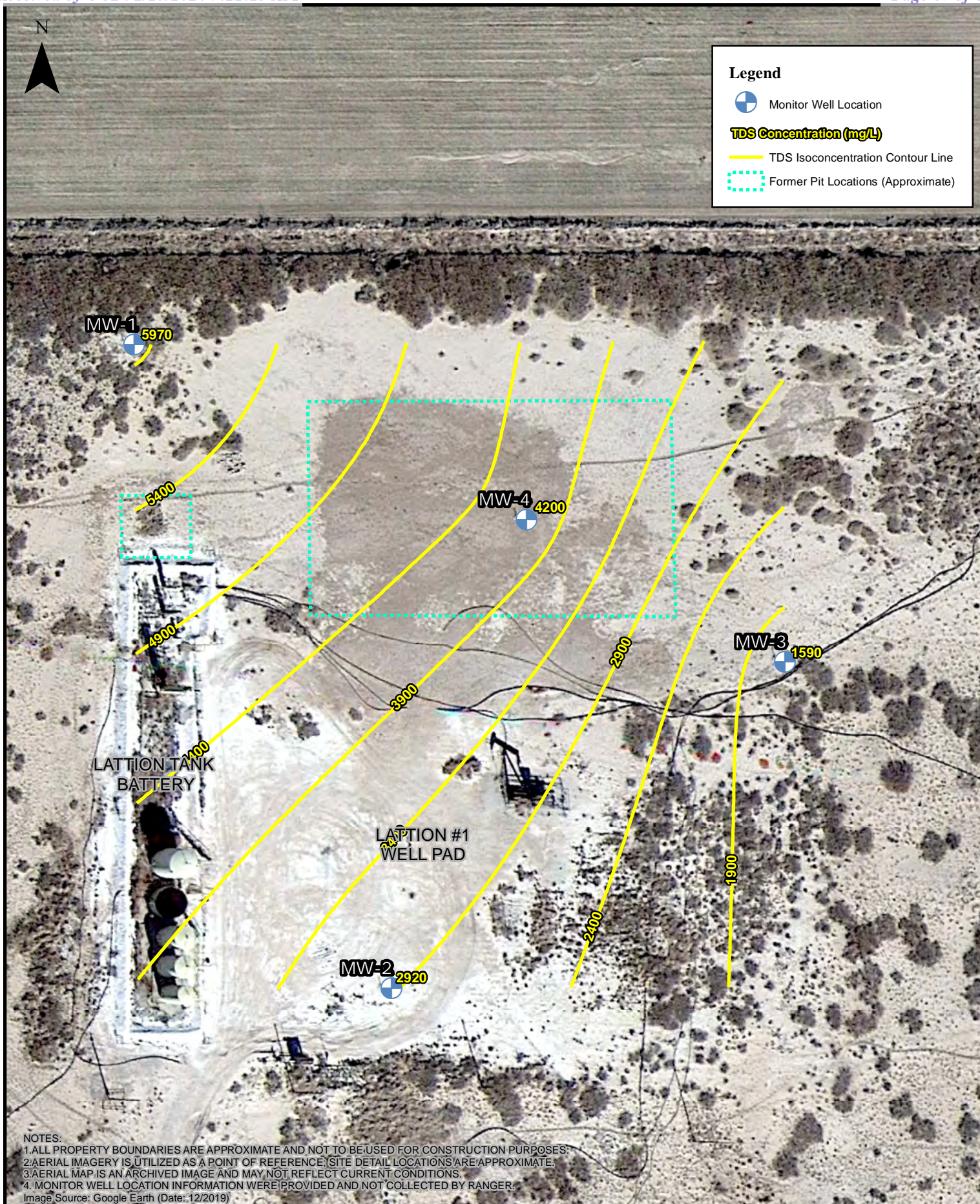
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 03/21/2019)

Lattion Pit

EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

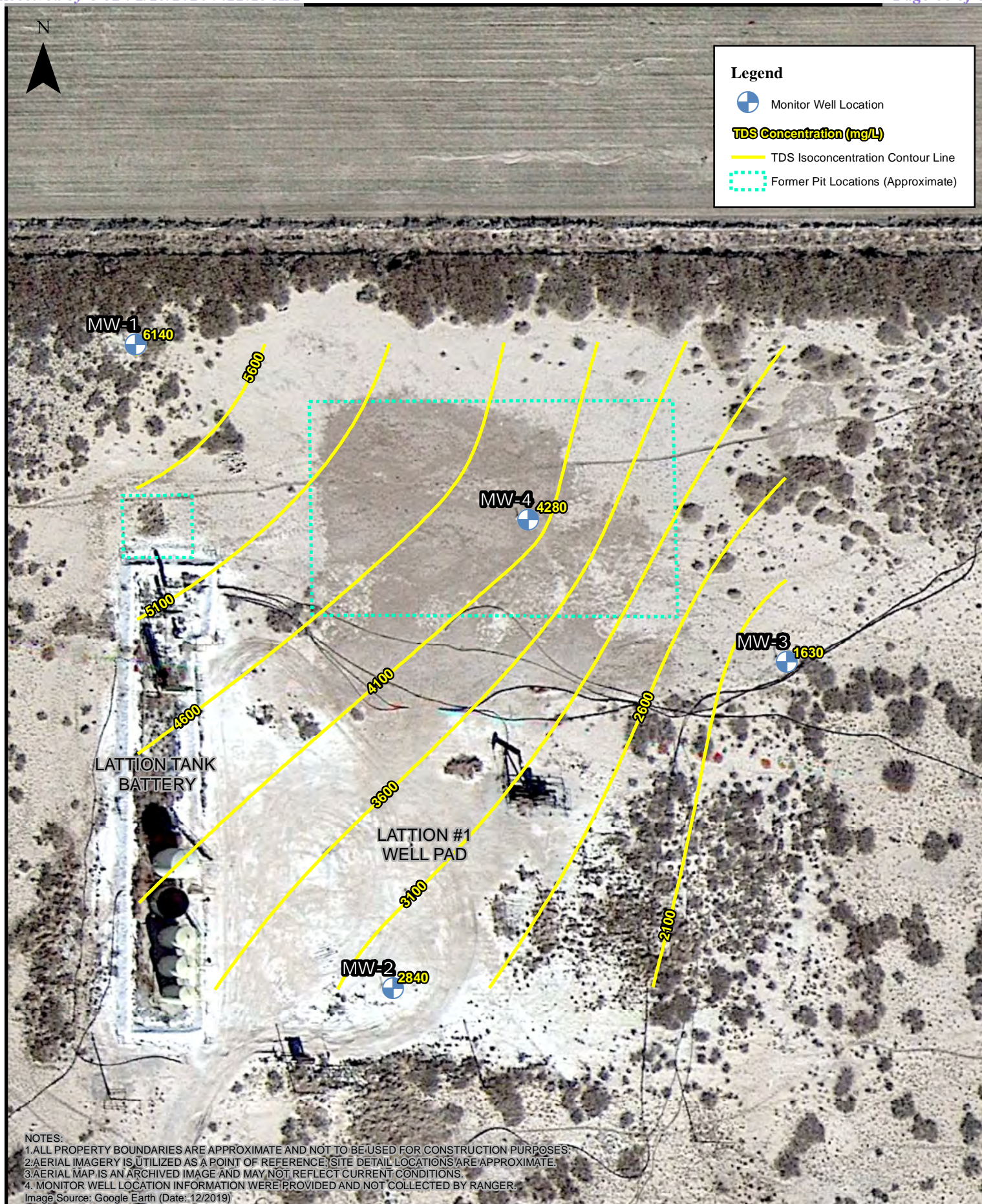
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 08/17/2021)

Lattion Pit

EOG Resources, Inc.



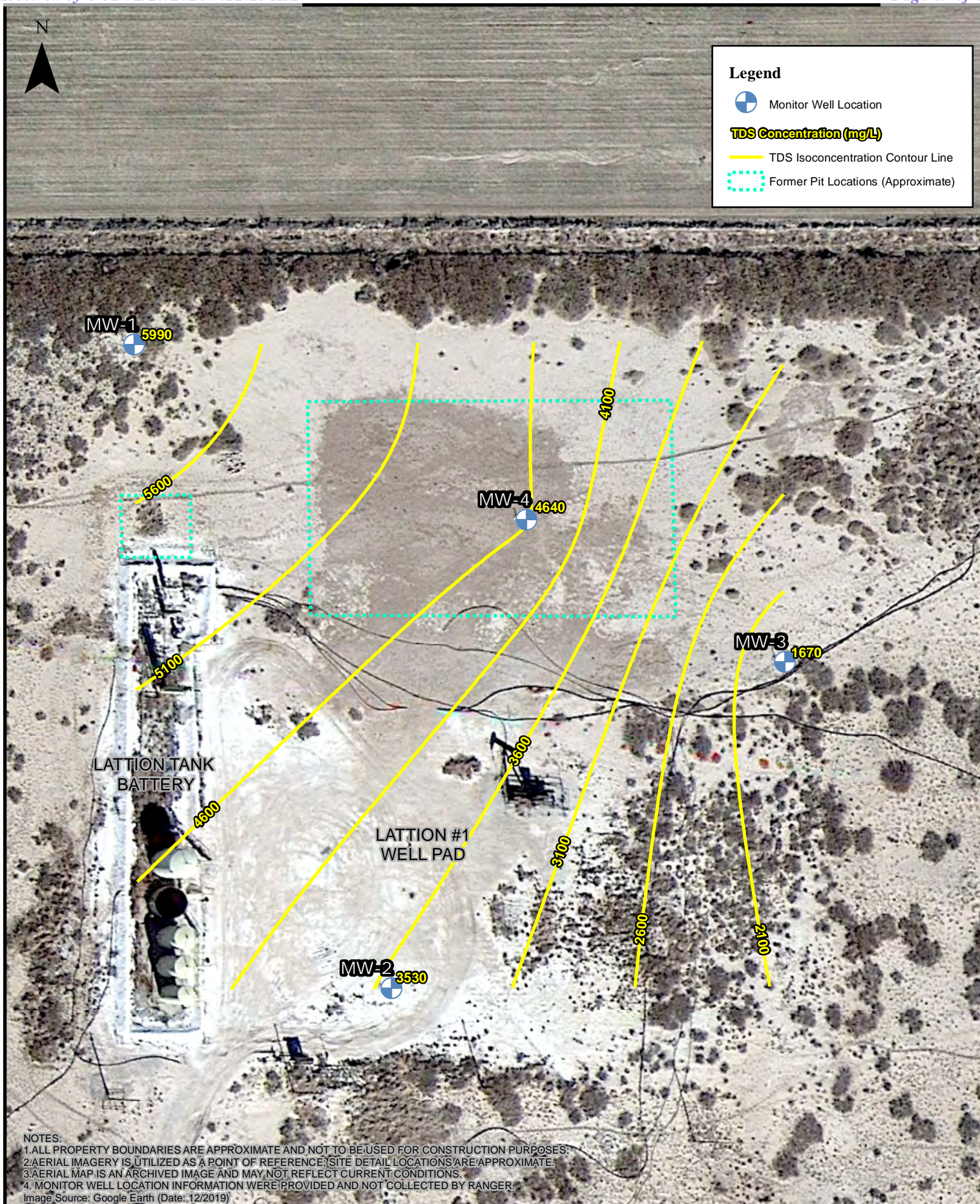


0 15 30 60 90 120 Feet

1:775

**Total Dissolved Solid Isoconcentration Map**  
 (Sample Date: 03/21/2022)  
 Lattion Pit  
 EOG Resources, Inc.





0 15 30 60 90 120 Feet

1:775

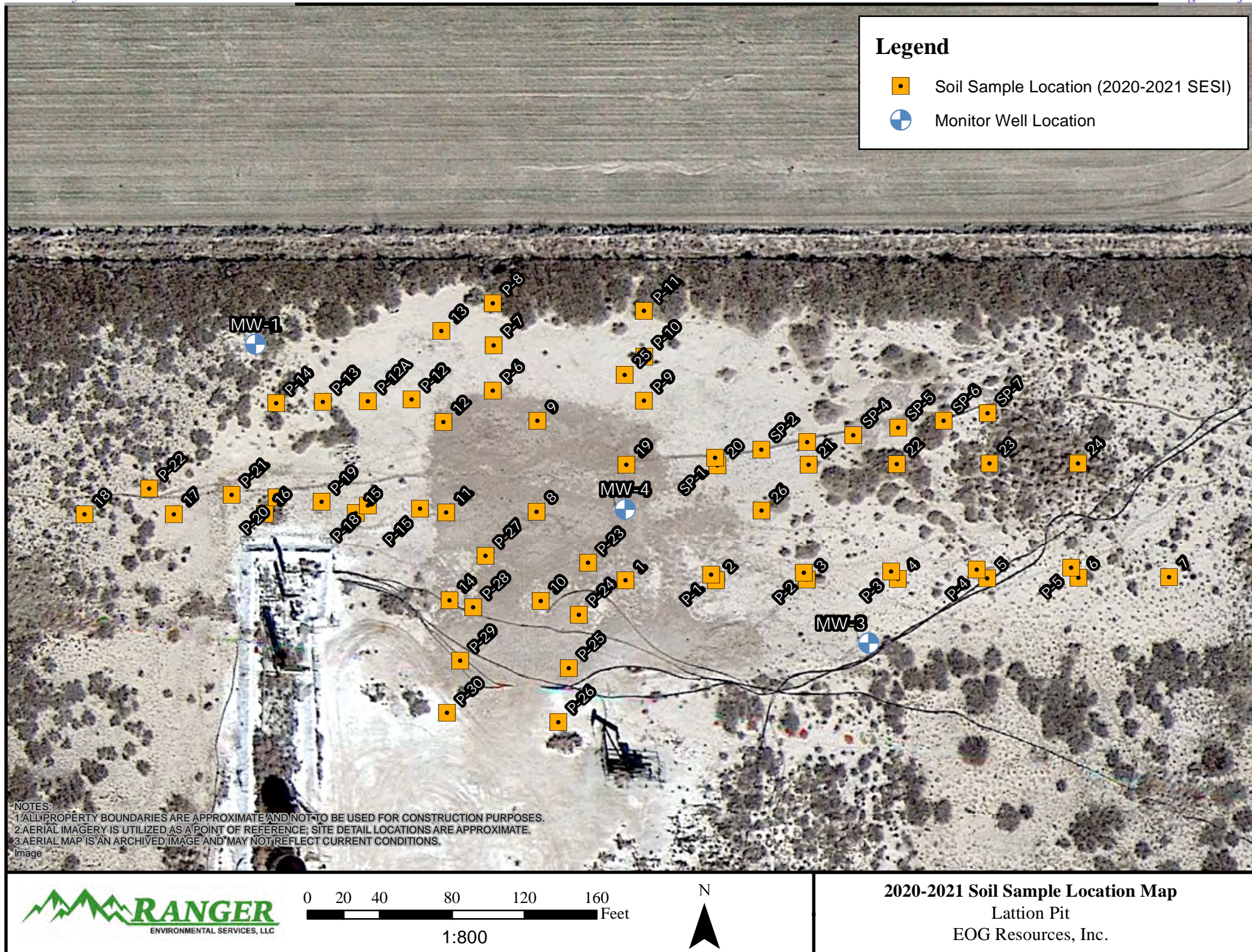
### Total Dissolved Solid Isoconcentration Map

(Sample Date: 08/04/2022)

Lattion Pit

EOG Resources, Inc.







## TABLES

Well Gauging Data

Groundwater EPA Method 300.0: Anions

Groundwater Dissolved Metals (Table 1 of 2)

Groundwater Dissolved Metals (Table 2 of 2)

Groundwater TPH and VOC Data Summary

Groundwater Specific Conductance, pH, Alkalinity, and TDS

Soil TPH, BTEX & Chloride Data Summary



**WELL GAUGING DATA**  
**LATTION PIT**  
**EDDY COUNTY, NEW MEXICO**  
**AP-23**

<b>WELL NUMBER</b>	<b>DATE</b>	<b>CASING ELEV. (FT)</b>	<b>DEPTH TO WATER (FT-BTOC)</b>	<b>LNAPL THICKNESS (FT)</b>	<b>GW ELEVATION (FT)</b>	<b>SCREENED INTERVAL (FT-BGS)</b>
MW-1	9/18/2002	3,309.05	34.42	0.00	3274.63	35'-70'
MW-1	9/19/2002	3,309.05	34.54	0.00	3274.51	
MW-1	11/3/2004	3,309.05	28.75	0.00	3280.30	
MW-1	12/2/2004	3,309.05	31.02	0.00	3278.03	
MW-1	12/15/2004	3,309.05	31.94	0.00	3277.11	
MW-1	12/21/2004	3,309.05	31.92	0.00	3277.13	
MW-1	12/30/2004	3,309.05	32.41	0.00	3276.64	
MW-1	3/6/2018	3,309.05	45.66	0.00	3263.39	
MW-1	3/27/2018	3,309.05	44.21	0.00	3264.84	
MW-1	3/21/2019	3,310.27	48.82	0.00	3261.45	
MW-1	10/28/2019	3,310.27	49.59	0.00	3260.68	
MW-1	9/17/2020	3,310.27	52.39	0.00	3257.88	
MW-1	8/17/2021	3,310.27	48.95	0.00	3261.32	
MW-2	9/18/2002	3307.92	61.40	0.00	3246.52	40'-70'
MW-2	9/19/2002	3307.92	61.65	0.00	3246.27	
MW-2	11/3/2004	3307.92	62.04	0.00	3245.88	
MW-2	12/2/2004	3307.92	61.67	0.00	3246.25	
MW-2	12/15/2004	3307.92	61.76	0.00	3246.16	
MW-2	12/21/2004	3307.92	61.31	0.00	3246.61	
MW-2	12/30/2004	3307.92	61.13	0.00	3246.79	
MW-2	3/6/2018	3307.92	54.04	0.00	3253.88	
MW-2	3/27/2018	3307.92	53.97	0.00	3253.95	
MW-2	3/21/2019	3,309.19	55.54	0.00	3253.65	
MW-2	10/28/2019	3,309.19	57.90	0.00	3251.29	
MW-2	9/17/2020	3,309.19	58.03	0.00	3251.16	
MW-2	8/17/2021	3,309.19	57.73	0.00	3251.46	
MW-3	9/18/2002	3307.90	55.08	0.00	3252.82	40'-65'
MW-3	9/19/2002	3307.90	58.73	0.00	3249.17	
MW-3	11/3/2004	3307.90	51.28	0.00	3256.62	
MW-3	12/2/2004	3307.90	50.38	0.00	3257.52	
MW-3	12/15/2004	3307.90	50.30	0.00	3257.60	
MW-3	12/21/2004	3307.90	50.01	0.00	3257.89	
MW-3	12/30/2004	3307.90	49.91	0.00	3257.99	
MW-3	3/6/2018	3307.90	57.43	0.00	3250.47	
MW-3	3/27/2018	3307.90	57.38	0.00	3250.52	



**WELL GAUGING DATA  
LATTION PIT  
EDDY COUNTY, NEW MEXICO  
AP-23**

WELL NUMBER	DATE	CASING ELEV. (FT)	DEPTH TO WATER (FT-BTOC)	LNAPL THICKNESS (FT)	GW ELEVATION (FT)	SCREENED INTERVAL (FT-BGS)
MW-3	3/21/2019	3309.00	59.13	0.00	3249.87	
MW-3	10/28/2019	3309.00	61.29	0.00	3247.71	
MW-3	9/17/2020	3309.00	61.75	0.00	3247.25	
MW-3	8/17/2021	3309.00	62.22	0.00	3246.78	
MW-4	9/18/2002	3307.63	38.17	0.00	3269.46	30'-55'
MW-4	9/19/2002	3307.63	38.23	0.00	3269.40	
MW-4	11/3/2004	3307.63	32.95	0.00	3274.68	
MW-4	12/2/2004	3307.63	33.96	0.00	3273.67	
MW-4	12/15/2004	3307.63	34.43	0.00	3273.20	
MW-4	12/21/2004	3307.63	34.32	0.00	3273.31	
MW-4	12/30/2004	3307.63	34.70	0.00	3272.93	
MW-4	3/6/2018	3307.63	47.31	0.00	3260.32	
MW-4	3/27/2018	3307.63	47.47	0.00	3260.16	
MW-4	3/21/2019	3308.88	51.51	0.00	3257.37	
MW-4	10/28/2019	3308.88	51.39	0.00	3257.49	
MW-4	9/17/2020	3308.88	52.58	0.00	3256.30	
MW-4	8/17/2021	3308.88	51.49	0.00	3257.39	

**Notes:**

1. Elevations referenced to a temporary on-site benchmark.
2. MW-1 located immediately adjacent to irrigated field.
3. BTOC = below top of casing



**GROUNDWATER EPA METHOD 300.0: ANIONS**  
**LATTION PIT**  
**EDDY COUNTY, NEW MEXICO**  
**AP-23**

All Values Presented in Parts Per Million (mg/L) unless otherwise noted

SAMPLE ID	DATE	Fluoride	Chloride	Bromide	Phosphorus, Orthophosphate (As P)	Sulfate	Nitrogen, Nitrite (As N)	Nitrogen, Nitrate (As N)	Nitrate+Nitrite as N
SB-2	10/20/2000	---	81,535	---	---	---	---	---	---
MW-1	9/19/2002	---	1,770	---	---	---	---	---	---
MW-1	11/3/2004	---	2,899	---	---	---	---	---	---
MW-1	3/17/2012	< 2.0	1,400	2.5	< 10	1,900	---	---	< 1.0
MW-1	6/18/2012	1.3	1,800	3.1	< 0.50	2,000	---	---	< 1.0
MW-1	9/12/2012	1.1	1,600	1.6	< 25	2,000	---	---	< 1.0
MW-1	12/6/2012	1	1,700	< 2.0	< 0.50	2,000	< 2.0	<0.10	---
MW-1	3/12/2013	1.9	1,500	2.3	< 10	1,800	---	---	< 2.0
MW-1	6/27/2013	1.3	1,400	2.1	< 0.50	1,600	---	---	< 1.0
MW-1	3/27/2018	0.42	1,700	2.2	< 0.50	1,700	---	---	< 1.0
MW-1	3/21/2019	0.62	1,500	2.1	< 0.50	1,600	---	---	< 1.0
MW-1	10/28/2019	1	1,500	2	< 0.50	1,600	<2.0	<0.10	---
MW-1	9/17/2020	1.1	1,400	2.3	< 2.5	1,500	---	---	< 1.0
MW-1	8/17/2021	2	1,800	2.5	< 2.5	1,800	<2.0	<0.50	---
MW-1	3/21/2022	2	1,600	2.6	< 10	1,500	---	---	< 1.0
MW-1	8/4/2022	3.2	1,500	3.2	< 10	1,800	---	---	< 1.0
MW-2	9/19/2002	---	709	---	---	---	---	---	---
MW-2	11/3/2004	---	740	---	---	---	---	---	---
MW-2	3/17/2012	1.3	790	1	< 0.50	1,200	---	---	2.2
MW-2	6/18/2012	1.2	790	1.6	< 0.50	1,200	---	---	1.5
MW-2	9/12/2012	0.6	940	1.2	< 25	1,300	---	---	3.2
MW-2	12/6/2012	0.98	890	< 2.0	< 0.50	1,200	<2.0	4.5	---
MW-2	3/12/2013	0.62	880	1.2	< 10	1,200	---	---	2.8
MW-2	6/27/2013	0.98	720	1.4	< 0.50	1,000	---	---	3.2
MW-2	3/27/2018	0.44	640	1.1	< 0.50	980	---	---	2.4
MW-2	3/21/2019	1	810	1.1	< 0.50	1,100	---	---	2
MW-2	10/28/2019	0.87	800	1.2	< 2.5	1,000	<0.50	2.6	---
MW-2	9/17/2020	<0.10	760	1.2	< 0.50	1,000	---	---	2.4
MW-2	8/17/2021	0.9	730	1.1	< 2.5	1,100	<0.50	2.3	---
MW-2	3/21/2022	< 2.0	690	1	< 10	1,000	---	---	2.3
MW-2	8/4/2022	0.75	890	1.2	< 0.50	1,100	---	---	1.9
MW-3	9/19/2002	---	59.1	---	---	---	---	---	---
MW-3	11/3/2004	---	64	---	---	---	---	---	---
MW-3	3/17/2012	< 2.0	42	0.13	< 0.50	950	---	---	< 1.0



GROUNDWATER EPA METHOD 300.0: ANIONS									
LATTION PIT									
EDDY COUNTY, NEW MEXICO									
AP-23									
All Values Presented in Parts Per Million (mg/L) unless otherwise noted									
SAMPLE ID	DATE	Fluoride	Chloride	Bromide	Phosphorus, Orthophosphate (As P)	Sulfate	Nitrogen, Nitrite (As N)	Nitrogen, Nitrate (As N)	Nitrate+Nitrite as N
MW-3	6/18/2012	1.4	45	0.2	< 0.50	900	---	---	< 1.0
MW-3	9/12/2012	1.3	45	0.11	< 10	990	---	---	< 1.0
MW-3	12/6/2012	1.3	45	0.1	< 0.50	1,000	<0.10	<0.10	---
MW-3	3/12/2013	1.4	43	0.12	< 10	960	---	---	< 1.0
MW-3	6/27/2013	1.4	43	0.12	< 0.50	1,000	---	---	< 1.0
MW-3	3/27/2018	1.7	41	0.15	< 0.50	880	---	---	< 1.0
MW-3	3/21/2019	1.6	47	0.12	< 0.50	900	---	---	< 1.0
MW-3	10/28/2019	1.6	45	< 0.50	< 2.5	870	<0.50	<0.50	---
MW-3	9/17/2020	1.3	45	< 0.50	< 2.5	920	---	---	< 1.0
MW-3	8/17/2021	1.5	43	0.13	< 0.50	880	<0.10	<0.10	---
MW-3	3/21/2022	1.4	42	0.14	< 0.50	970	---	---	< 1.0
MW-3	8/4/2022	1.3	42	0.15	< 0.50	860	---	---	< 1.0
MW-4	9/19/2002	---	1,280	---	---	---	---	---	---
MW-4	11/3/2004	---	1,899	---	---	---	---	---	---
MW-4	3/17/2012	< 2.0	1,200	< 2.0	< 10	1,800	---	---	< 1.0
MW-4	6/18/2012	1.7	1,200	2.3	< 0.50	1,800	---	---	< 1.0
MW-4	9/12/2012	1.3	1,200	1.5	< 25	2,000	---	---	< 1.0
MW-4	12/6/2012	1.1	1,200	< 2.0	< 0.50	1,800	<2.0	<0.10	---
MW-4	3/12/2013	1.9	1,100	1.5	< 10	1,700	---	---	< 1.0
MW-4	6/27/2013	1.2	1,000	1.7	< 0.50	1,600	---	---	< 1.0
MW-4	3/27/2018	0.62	930	1.7	< 0.50	1,400	---	---	< 1.0
MW-4	3/21/2019	0.87	1,100	1.5	< 0.50	1,700	---	---	< 1.0
MW-4	10/28/2019	1.2	990	1.5	< 0.50	1,500	<2.0	<0.10	---
MW-4	9/17/2020	1.2	960	1.7	< 2.5	1,500	---	---	< 1.0
MW-4	8/17/2021	2.5	1,100	1.6	< 2.5	1,800	<0.50	<0.50	---
MW-4	3/21/2022	< 2.0	1,100	1.7	< 10	1,700	---	---	< 1.0
MW-4	8/4/2022	2.2	1,000	1.6	< 0.50	1,700	---	---	< 1.0
20.6.2.3103 NMAC GW STANDARDS									
(<10,000 mg/L)									
A. Human Health Standards									
		1.6					1	10	10 <sup>1</sup>
B. Other Standards for Domestic Water Supply									
			250			600			
C. Standards for Irrigation Use									
Notes:									
1. This standarad is for nitrate. The nitrite standard is 1.0 mg/L.									
2. Exceedances of the listed closure criteria are highlighted in bold, red type.									



GROUNDWATER DISSOLVED METALS (TABLE 1 OF 2) LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/L)																		
SAMPLE ID	DATE	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Iron	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Zinc
MW-1	3/17/2012	---	0.02	---	---	< 0.0020	880	< 0.0060	---	0.41	350	0.032	---	---	4.8	< 0.0050	290	0.015
MW-1	6/18/2012	---	0.018	---	---	< 0.0020	940	< 0.0060	---	< 0.020	350	0.028	---	---	4.3	< 0.0050	370	0.012
MW-1	9/12/2012	---	0.02	---	---	< 0.0020	830	< 0.0060	---	0.68	320	0.25	---	---	4.2	< 0.0050	230	0.017
MW-1	12/6/2012	---	0.022	---	---	< 0.0020	940	< 0.0060	---	< 0.020	370	0.2	---	---	5.5	< 0.0050	310	0.033
MW-1	3/12/2013	---	0.019	---	---	< 0.0020	820	< 0.0060	---	0.2	300	0.33	---	---	4.3	< 0.0050	230	< 0.010
MW-1	6/27/2013	---	0.018	---	---	< 0.0020	910	< 0.0060	---	0.031	300	0.16	---	---	4.9	< 0.050	200	0.021
MW-1	3/27/2018	---	0.015	---	---	< 0.0020	910	< 0.0060	---	< 0.020	350	0.14	---	---	4.2	0.031	280	0.02
MW-1	3/21/2019	< 0.020	0.014	< 0.0020	0.32	< 0.0020	940	< 0.0060	< 0.0060	0.048	320	0.22	< 0.0080	< 0.010	4.1	0.011	230	0.017
MW-1	10/28/2019	< 0.020	0.018	< 0.0020	0.35	< 0.0020	920	< 0.0060	< 0.0060	< 0.020	330	0.14	< 0.0080	< 0.010	4.3	0.016	230	0.046
MW-1	9/17/2020	<0.10	0.017	< 0.010	0.39	< 0.010	970	< 0.030	< 0.030	<0.10	370	0.25	< 0.040	< 0.050	5.1	< 0.025	320	<0.050
MW-1	8/17/2021	< 0.10	0.04	< 0.010	0.36	< 0.010	940	< 0.030	< 0.030	0.3	370	1.7	< 0.040	< 0.050	5.3	< 0.025	270	< 0.050
MW-1	3/21/2022	< 0.020	0.027	< 0.0020	0.39	< 0.0020	1,000	< 0.0060	0.0071	1.2	340	0.33	< 0.0080	< 0.010	6.1	< 0.0050	250	< 0.010
MW-1	8/4/2022	< 0.20	< 0.020	< 0.020	< 0.40	< 0.020	920	< 0.060	< 0.060	< 0.20	330	0.13	< 0.080	< 0.10	< 10	< 0.050	220	0.29
MW-2	3/17/2012	---	0.014	---	---	< 0.0020	570	< 0.0060	---	0.044	180	0.0027	---	---	4.6	< 0.0050	81	< 0.010
MW-2	6/18/2012	---	0.014	---	---	< 0.0020	550	< 0.0060	---	0.061	180	0.0032	---	---	4.6	< 0.0050	89	0.01
MW-2	9/12/2012	---	0.013	---	---	< 0.0020	570	< 0.0060	---	0.041	180	0.0026	---	---	4.1	< 0.0050	86	0.011
MW-2	12/6/2012	---	0.016	---	---	< 0.0020	600	< 0.0060	---	< 0.020	200	0.0023	---	---	5.1	< 0.0050	100	< 0.010
MW-2	3/12/2013	---	0.012	---	---	< 0.0020	560	< 0.0060	---	0.023	180	0.0021	---	---	4.6	< 0.0050	92	< 0.010
MW-2	6/27/2013	---	0.013	---	---	< 0.0020	610	< 0.0060	---	0.035	170	0.0021	---	---	4.7	< 0.050	87	< 0.010
MW-2	3/27/2018	---	0.013	---	---	< 0.0020	580	< 0.0060	---	0.04	180	0.0023	---	---	4.5	0.021	97	0.028
MW-2	3/21/2019	< 0.020	0.012	< 0.0020	0.067	< 0.0020	570	< 0.0060	< 0.0060	0.025	170	0.0025	< 0.0080	< 0.010	4.2	0.0079	85	0.022
MW-2	10/28/2019	< 0.020	0.012	< 0.0020	0.067	< 0.0020	600	< 0.0060	< 0.0060	0.026	190	< 0.0020	< 0.0080	< 0.010	4.5	0.015	94	0.031
MW-2	9/17/2020	<0.10	0.015	<0.010	<0.20	<0.010	610	<0.030	<0.030	<0.10	200	< 0.010	<0.040	<0.050	5.4	<0.025	100	<0.050
MW-2	8/17/2021	< 0.020	0.012	< 0.0020	0.071	< 0.0020	510	< 0.0060	< 0.0060	0.039	160	0.0029	< 0.0080	< 0.010	4.5	< 0.0050	89	0.015
MW-2	3/21/2022	< 0.020	0.014	< 0.0020	0.083	< 0.0020	520	< 0.0060	< 0.0060	0.027	160	0.0041	< 0.0080	< 0.010	4.3	< 0.0050	100	0.011
MW-2	8/4/2022	< 0.20	< 0.020	< 0.020	< 0.40	< 0.020	570	< 0.060	< 0.060	< 0.20	180	< 0.020	< 0.080	< 0.10	< 10	< 0.050	99	< 0.10
MW-3	3/17/2012	---	0.019	---	---	< 0.0020	270	< 0.0060	---	< 0.020	100	0.042	---	---	2.7	< 0.0050	34	0.016
MW-3	6/18/2012	---	0.017	---	---	< 0.0020	270	< 0.0060	---	< 0.020	99	0.0029	---	---	2.8	< 0.0050	36	0.026
MW-3	9/12/2012	---	0.017	---	---	< 0.0020	270	< 0.0060	---	< 0.020	97	0.03	---	---	2.3	< 0.0050	33	< 0.010
MW-3	12/6/2012	---	0.019	---	---	< 0.0020	270	< 0.0060	---	< 0.020	110	< 0.0020	---	---	3.2	< 0.0050	39	< 0.010
MW-3	3/12/2013	---	0.018	---	---	< 0.0020	240	< 0.0060	---	0.22	92	0.06	---	---	2.4	< 0.0050	34	< 0.010
MW-3	6/27/2013	---	0.018	---	---	< 0.0020	260	< 0.0060	---	< 0.020	98	0.0034	---	---	2.8	< 0.025	34	< 0.010
MW-3	3/27/2018	---	0.018	---	---	< 0.0020	280	< 0.0060	---	< 0.020	100	0.089	---	---	2.8	0.011	37	0.032
MW-3	3/21/2019	< 0.020	0.018	< 0.0020	0.11	< 0.0020	270	< 0.0060	< 0.0060	< 0.020	95	0.037	0.009	< 0.010	2.5	< 0.0050	34	0.027
MW-3	10/28/2019	< 0.020	0.018	< 0.0020	0.11	< 0.0020	240	< 0.0060	< 0.0060	< 0.020	100	0.012	< 0.0080	< 0.010	2.8	0.0071	34	0.068
MW-3	9/17/2020	<0.10	0.018	<0.010	<0.20	<0.010	290	<0.030	<0.030	<0.10	110	0.011	<0.040	<0.050	<5.0	<0.025	36	<0.050
MW-3	8/17/2021	< 0.020	0.019	< 0.0020	0.12	< 0.0020	280	< 0.0060	< 0.0060	< 0.020	100	< 0.0020	< 0.0080	< 0.010	2.7	< 0.0050	33	0.047
MW-3	3/21/2022	< 0.020	0.024	< 0.0020	0.14	< 0.0020	270	< 0.0060	< 0.0060	< 0.020	100	0.22	< 0.0080	< 0.010	3	< 0.0050	40	0.014
MW-3	8/4/2022	< 0.20	0.021	< 0.020	< 0.40	< 0.020	280	< 0.060	< 0.060	< 0.20	110	< 0.020	< 0.080	< 0.10	< 10	< 0.050	34	0.19



GROUNDWATER DISSOLVED METALS (TABLE 1 OF 2) LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/L)																		
SAMPLE ID	DATE	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Iron	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Zinc
MW-4	3/17/2012	---	0.016	---		< 0.0020	780	< 0.0060	---	0.071	310	0.051	---	---	3.6	< 0.0050	200	0.012
MW-4	6/18/2012	---	0.016	---	---	< 0.0020	780	< 0.0060	---	0.14	300	0.073	---	---	3.5	< 0.0050	220	0.043
MW-4	9/12/2012	---	0.013	---	---	< 0.0020	760	< 0.0060	---	0.021	300	0.048	---	---	3.2	< 0.0050	200	< 0.010
MW-4	12/6/2012	---	0.016	---	---	< 0.0020	780	< 0.0060	---	0.086	320	0.076	---	---	4.2	< 0.0050	230	0.02
MW-4	3/12/2013	---	0.013	---	---	< 0.0020	710	< 0.0060	---	0.089	280	0.049	---	---	3.7	< 0.0050	180	0.038
MW-4	6/27/2013	---	0.014	---	---	< 0.0020	750	< 0.0060	---	0.27	280	0.063	---	---	4.3	< 0.050	180	0.019
MW-4	3/27/2018	---	0.011	---	---	< 0.0020	770	< 0.0060	---	0.023	290	0.027	---	---	3.7	0.025	150	0.027
MW-4	3/21/2019	< 0.020	0.011	< 0.0020	0.16	< 0.0020	750	< 0.0060	< 0.0060	< 0.020	280	0.031	< 0.0080	< 0.010	3.5	0.0092	140	0.03
MW-4	10/28/2019	< 0.020	0.012	0.0023	0.17	< 0.0020	720	< 0.0060	< 0.0060	< 0.020	250	0.032	< 0.0080	< 0.010	3.6	0.019	130	0.023
MW-4	9/17/2020	<0.10	0.012	<0.010	<0.20	<0.010	760	<0.030	<0.030	<0.10	300	0.053	<0.040	<0.050	<5.0	<0.025	150	<0.050
MW-4	8/17/2021	< 0.020	0.012	< 0.0020	0.19	< 0.0020	710	< 0.0060	< 0.0060	0.03	280	0.042	< 0.0080	< 0.010	4.2	< 0.0050	140	0.019
MW-4	3/21/2022	< 0.020	0.014	< 0.0020	0.2	< 0.0020	730	< 0.0060	0.0066	< 0.020	300	0.035	< 0.0080	< 0.010	4	< 0.0050	150	< 0.010
MW-4	8/4/2022	< 0.20	< 0.020	< 0.020	< 0.40	< 0.020	720	< 0.060	< 0.060	< 0.20	290	0.036	< 0.080	< 0.10	< 10	< 0.050	120	< 0.10
<div>20.6.2.3103 NMAC GW STANDARDS (&lt;10,000 mg/L)</div> <div>A. Human Health Standards20.00040.0050.050.05</div> <div>B. Other Standards for Domestic Water Supply1.00.210</div> <div>C. Standards for Irrigation Use5.00.750.051.00.2</div>																		
Notes: 1. Exceedances of the listed closure criteria are highlighted in bold, red type.																		



## GROUNDWATER DISSOLVED METALS (TABLE 2 OF 2)

## LATTION PIT

## EDDY COUNTY, NEW MEXICO

## AP-23

All Values Presented in Parts Per Million (mg/L)

SAMPLE ID	DATE	Antimony	Arsenic	Copper	Lead	Mercury	Selenium	Thallium	Uranium
MW-1	3/17/2012	---	0.0015	< 0.0060	< 0.0050	< 0.00020	0.0052	---	0.002
MW-1	6/18/2012	---	0.0021	< 0.0060	< 0.0050	< 0.00020	0.0086	---	0.0027
MW-1	9/12/2012	---	0.0023	0.0062	< 0.0010	< 0.00020	0.0083	---	0.0057
MW-1	12/6/2012	---	0.0018	< 0.0060	< 0.0010	< 0.00020	0.0093	---	0.0045
MW-1	3/12/2013	---	0.0025	< 0.0060	< 0.0050	< 0.00020	0.0045	---	0.0027
MW-1	6/27/2013	---	0.0063	< 0.0060	< 0.0050	< 0.00020	0.022	---	< 0.0050
MW-1	3/27/2018	---	< 0.0050	< 0.0050	< 0.0025	< 0.00020	< 0.0050	---	< 0.0025
MW-1	3/21/2019	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.00020	< 0.010	< 0.0025	< 0.0050
MW-1	10/28/2019	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	< 0.0050	< 0.0025	< 0.0025
MW-1	9/17/2020	< 0.010	< 0.010	< 0.030	< 0.0050	---	< 0.010	< 0.0050	< 0.0050
MW-1	8/17/2021	< 0.0010	0.0023	< 0.030	< 0.0025	---	< 0.0010	< 0.0012	< 0.0025
MW-1	3/21/2022	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	< 0.0050	< 0.0012	0.0036
MW-1	8/4/2022	< 0.0010	0.0016	< 0.060	< 0.00050	---	< 0.0010	< 0.00025	0.0009
MW-2	3/17/2012	---	0.0019	< 0.0060	< 0.0050	< 0.00020	0.025	---	0.0061
MW-2	6/18/2012	---	0.0022	< 0.0060	< 0.0050	< 0.00020	0.024	---	0.0069
MW-2	9/12/2012	---	0.0019	0.0021	< 0.0010	< 0.00020	0.027	---	0.0071
MW-2	12/6/2012	---	0.0018	< 0.0060	< 0.0010	< 0.00020	0.026	---	0.0078
MW-2	3/12/2013	---	0.0017	< 0.0060	0.0060	< 0.00020	0.026	---	0.0068
MW-2	6/27/2013	---	0.0045	< 0.0060	< 0.0050	< 0.00020	0.037	---	0.0069
MW-2	3/27/2018	---	< 0.0050	< 0.0010	< 0.0025	< 0.00020	0.017	---	0.0059
MW-2	3/21/2019	< 0.0010	< 0.0010	< 0.0010	< 0.00050	< 0.00020	0.013	< 0.00050	0.0054
MW-2	10/28/2019	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	0.018	< 0.0025	0.0058
MW-2	9/17/2020	< 0.010	< 0.010	< 0.030	< 0.0050	---	0.013	< 0.0050	0.0052
MW-2	8/17/2021	< 0.0010	< 0.0010	< 0.0060	< 0.00050	---	0.012	< 0.00025	0.0054
MW-2	3/21/2022	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	0.012	< 0.0012	0.0043
MW-2	8/4/2022	< 0.0010	0.0011	< 0.060	< 0.00050	---	0.016	< 0.00025	0.0056
MW-3	3/17/2012	---	0.0012	< 0.0060	< 0.0050	< 0.00020	< 0.0010	---	< 0.0010
MW-3	6/18/2012	---	< 0.0010	< 0.0060	< 0.0050	< 0.00020	< 0.0010	---	< 0.0010
MW-3	9/12/2012	---	0.0012	0.0021	< 0.0010	< 0.00020	< 0.0010	---	< 0.0010
MW-3	12/6/2012	---	< 0.0010	< 0.0060	< 0.0010	< 0.00020	0.001	---	0.0011
MW-3	3/12/2013	---	< 0.0010	< 0.0060	0.0064	< 0.00020	< 0.0010	---	< 0.0010
MW-3	6/27/2013	---	0.0013	< 0.0060	< 0.0050	< 0.00020	0.0027	---	0.0011



## GROUNDWATER DISSOLVED METALS (TABLE 2 OF 2)

## LATTION PIT

## EDDY COUNTY, NEW MEXICO

## AP-23

All Values Presented in Parts Per Million (mg/L)

SAMPLE ID	DATE	Antimony	Arsenic	Copper	Lead	Mercury	Selenium	Thallium	Uranium
MW-3	3/27/2018	---	0.0011	< 0.0010	< 0.00050	< 0.00020	< 0.0010	---	0.00057
MW-3	3/21/2019	< 0.0010	< 0.0010	< 0.0010	< 0.00050	< 0.00020	< 0.010	< 0.00050	< 0.0050
MW-3	10/28/2019	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	< 0.0050	< 0.0025	< 0.0025
MW-3	9/17/2020	< 0.010	< 0.010	< 0.030	< 0.0050	---	< 0.010	< 0.0050	< 0.0050
MW-3	8/17/2021	< 0.0010	0.0014	< 0.0060	< 0.00050	---	< 0.0010	< 0.00025	0.00056
MW-3	3/21/2022	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	< 0.0050	< 0.0012	< 0.0025
MW-3	8/4/2022	< 0.0010	0.0024	< 0.060	< 0.00050	---	< 0.0010	< 0.00025	0.00057
MW-4	3/17/2012	---	0.0014	< 0.0060	< 0.0050	< 0.00020	0.0042	---	0.0036
MW-4	6/18/2012	---	0.002	< 0.0060	< 0.0050	< 0.00020	0.0058	---	0.0036
MW-4	9/12/2012	---	0.0017	< 0.0050	< 0.0050	< 0.00020	< 0.0050	---	0.0033
MW-4	12/6/2012	---	0.0014	< 0.0060	< 0.0010	< 0.00020	0.0059	---	0.0037
MW-4	3/12/2013	---	0.0012	< 0.0060	< 0.0050	< 0.00020	0.0036	---	0.0028
MW-4	6/27/2013	---	0.0041	< 0.0060	< 0.0050	< 0.00020	0.017	---	0.0025
MW-4	3/27/2018	---	< 0.0050	< 0.0050	< 0.0025	< 0.00020	< 0.0050	---	< 0.0025
MW-4	3/21/2019	< 0.0010	< 0.0010	0.0015	< 0.00050	< 0.00020	< 0.010	< 0.00050	< 0.0050
MW-4	10/28/2019	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	< 0.0050	< 0.0025	< 0.0025
MW-4	9/17/2020	< 0.010	< 0.010	< 0.030	< 0.0050	---	< 0.010	< 0.0050	< 0.0050
MW-4	8/17/2021	< 0.0010	0.001	< 0.0060	< 0.0025	---	< 0.0010	< 0.0012	< 0.0025
MW-4	3/21/2022	< 0.0050	< 0.0050	< 0.0050	< 0.0025	---	< 0.0050	< 0.0012	< 0.0025
MW-4	8/4/2022	< 0.0010	0.0016	< 0.060	< 0.00050	---	< 0.0010	< 0.00025	0.00096
<b>20.6.2.3103 NMAC GW STANDARDS</b> <b>(&lt;10,000 mg/L)</b>  <b>A. Human Health Standards</b> <b>0.006</b> <b>0.01</b> <b>0.015</b> <b>0.002</b> <b>0.05</b> <b>0.002</b> <b>0.03</b> <b>B. Other Standards for Domestic Water Supply</b> <b>1.0</b> <b>C. Standards for Irrigation Use</b>									
Notes: 1. Exceedances of the listed closure criteria are highlighted in bold, red type.									



GROUNDWATER TPH AND VOC DATA SUMMARY LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/L)														
SAMPLE ID	DATE	TPH TOTAL	TPH GRO	TPH DRO	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Naphthalene	1-Methyl naphthalene	2-Methyl naphthalene
SB-2	10/20/2000	<1.00	<0.5	<0.5	---	0.004	<0.001	<0.001	<0.002	---	---	---	---	---
MW-1	9/19/2002	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	---	---	---
MW-1	11/3/2004	---	---	---	---	<0.002	<0.002	<0.002	<0.006	---	---	---	---	---
MW-1	3/17/2012	---	---	---	<0.002	<0.002	<0.002	<0.002	<0.004	<0.002	<0.002	<0.004	<0.008	<0.008
MW-1	6/18/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-1	9/12/2012	---	---	---	---	<0.002	<0.002	<0.002	<0.004	---	---	<0.004	---	---
MW-1	12/6/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-1	3/12/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-1	6/27/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-1	3/27/2018	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-1	3/21/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	---	---
MW-1	10/28/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-1	9/17/2020	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-1	8/17/2021	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-1	3/21/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-1	8/4/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-2	9/19/2002	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	---	---	---
MW-2	11/3/2004	---	---	---	---	<0.002	<0.002	<0.002	<0.006	---	---	---	---	---
MW-2	3/17/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002	<0.004	<0.004
MW-2	6/18/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-2	9/12/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-2	12/6/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-2	3/12/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-2	6/27/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-2	3/27/2018	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-2	3/21/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	---	---
MW-2	10/28/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-2	9/17/2020	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-2	8/17/2021	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-2	3/21/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-2	8/4/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-3	9/19/2002	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	---	---	---
MW-3	11/3/2004	---	---	---	---	<0.002	<0.002	<0.002	<0.006	---	---	---	---	---
MW-3	3/17/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002	<0.004	<0.004
MW-3	6/18/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-3	9/12/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-3	12/6/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-3	3/12/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-3	6/27/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-3	3/27/2018	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004



GROUNDWATER TPH AND VOC DATA SUMMARY LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/L)														
SAMPLE ID	DATE	TPH TOTAL	TPH GRO	TPH DRO	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Naphthalene	1-Methyl naphthalene	2-Methyl naphthalene
MW-3	3/21/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	---	---
MW-3	10/28/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-3	9/17/2020	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-3	8/17/2021	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-3	3/21/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-3	8/4/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-4	9/19/2002	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	---	---	---
MW-4	11/3/2004	---	---	---	---	<0.002	<0.002	<0.002	<0.006	---	---	---	---	---
MW-4	3/17/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002	<0.004	<0.004
MW-4	6/18/2012	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-4	9/12/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-4	12/6/2012	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-4	3/12/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-4	6/27/2013	---	---	---	---	<0.001	<0.001	<0.001	<0.002	---	---	<0.002	---	---
MW-4	3/27/2018	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-4	3/21/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	---	---
MW-4	10/28/2019	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-4	9/17/2020	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-4	8/17/2021	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-4	3/21/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
MW-4	8/4/2022	---	---	---	---	<0.001	<0.001	<0.001	<0.0015	---	---	<0.002	<0.004	<0.004
20.6.2.3103 NMAC GW STANDARDS (<10,000 mg/L)														
A. Human Health Standards														
B. Other Standards for Domestic Water Supply														
C. Standards for Irrigation Use														
Notes:														
1. The 0.03 mg/L standard is for total naphthalene plus monomethylnaphthalenes.														
2. Exceedances of the listed closure criteria are highlighted in bold, red type.														



**GROUNDWATER SPECIFIC CONDUCTANCE, pH, ALKALINITY, AND TDS**  
**LATTION PIT**  
**EDDY COUNTY, NEW MEXICO**  
**AP-23**

All Values Presented in Parts Per Million (mg/L)

SAMPLE ID	DATE	Conductivity µmhos/c	pH	Alkalinity (mg/L)			TDS (mg/L)
				Bicarbonate (As CaCO <sub>3</sub> )	Carbonate (As CaCO <sub>3</sub> )	Total Alkalinity (as CaCO <sub>3</sub> )	
MW-1	9/19/2002	---	---	---	---	---	6,140
MW-1	11/3/2004	---	---	---	---	---	8,172
MW-1	3/17/2012	6300	7.07	170	< 2.0	170	5,080
MW-1	6/18/2012	6700	7.19	200	< 2.0	200	5,940
MW-1	9/12/2012	6600	---	160	< 2.0	160	5,270
MW-1	12/6/2012	7000	7.13	170	< 2.0	170	5,760
MW-1	3/12/2013	6500	7.38	160	< 2.0	160	5,380
MW-1	6/27/2013	6800	7.28	140	< 2.0	140	5,330
MW-1	3/27/2018	6600	7.48	151.7	< 2.000	151.7	5,460
MW-1	3/21/2019	6400	6.99	177.8	< 2.000	177.8	5,230
MW-1	10/28/2019	6900	7.39	168.6	< 2.000	168.6	5,550
MW-1	9/17/2020	7000	7.41	169.8	< 2.000	169.8	5,650
MW-1	8/17/2021	7500	7.05	186.4	< 2.000	186.4	5,970
MW-1	3/21/2022	7200	7.76	152.8	< 2.000	152.8	6,140
MW-1	8/4/2022	6800	7.53	124.9	< 2.000	124.9	5,990
MW-2	9/19/2002	---	---	---	---	---	3,420
MW-2	11/3/2004	---	---	---	---	---	3,216
MW-2	3/17/2012	3,800	7.28	150	< 2.0	150	3,090
MW-2	6/18/2012	3,900	7.34	150	< 2.0	150	3,260
MW-2	9/12/2012	4,300	---	140	< 2.0	140	3,370
MW-2	12/6/2012	4,300	7.75	140	< 2.0	140	3,510
MW-2	3/12/2013	4,200	7.48	150	< 2.0	150	3,360
MW-2	6/27/2013	4,300	7.36	150	< 2.0	150	3,380
MW-2	3/27/2018	3,600	7.66	156.9	< 2.000	156.9	2,870
MW-2	3/21/2019	3,900	7.2	146.8	< 2.000	146.8	2,920
MW-2	10/28/2019	4,300	7.52	150.7	< 2.000	150.7	3,110
MW-2	9/17/2020	4,000	7.67	149.2	< 2.000	149.2	3,160
MW-2	8/17/2021	3,800	7.40	152.5	< 2.000	152.5	2,920
MW-2	3/21/2022	3,600	7.83	152.7	< 2.000	152.7	2,840
MW-2	8/4/2022	4,200	7.69	150.4	< 2.000	150.4	3,530
MW-3	9/19/2002	---	---	---	---	---	1,700
MW-3	11/3/2004	---	---	---	---	---	1,545
MW-3	3/17/2012	1,800	7.43	180	< 2.0	180	1,590
MW-3	6/18/2012	1,900	7.55	180	< 2.0	180	1,590
MW-3	9/12/2012	1,900	---	180	< 2.0	180	1,580
MW-3	12/6/2012	1,800	7.60	180	< 2.0	180	1,600
MW-3	3/12/2013	1,900	7.70	190	< 2.0	190	1,620
MW-3	6/27/2013	2,000	7.61	190	< 2.0	190	1,630
MW-3	3/27/2018	1,900	7.86	180.8	< 2.000	180.8	1,620
MW-3	3/21/2019	1,900	7.35	175.8	< 2.000	175.8	1,610
MW-3	10/28/2019	1,900	7.73	182.6	< 2.000	182.6	1,590
MW-3	9/17/2020	1,900	7.69	177.7	< 2.000	177.7	1,600
MW-3	8/17/2021	1,900	7.53	176.2	< 2.000	176.2	1,590
MW-3	3/21/2022	1,900	7.85	183	< 2.000	183	1,630
MW-3	8/4/2022	1,900	7.88	195.5	< 2.000	195.5	1,670
MW-4	9/19/2002	---	---	---	---	---	5,350
MW-4	11/3/2004	---	---	---	---	---	5,650
MW-4	3/17/2012	5,400	7.16	160	< 2.0	160	4,470
MW-4	6/18/2012	5,500	7.27	160	< 2.0	160	4,880
MW-4	9/12/2012	5,800	---	160	< 2.0	160	4,370
MW-4	12/6/2012	5,700	7.26	160	< 2.0	160	4,550



GROUNDWATER SPECIFIC CONDUCTANCE, pH, ALKALINITY, AND TDS LATTION PIT EDDY COUNTY, NEW MEXICO AP-23 All Values Presented in Parts Per Million (mg/L)							
SAMPLE ID	DATE	Conductivity µmhos/c	pH	Alkalinity (mg/L)			TDS (mg/L)
				Bicarbonate (As CaCO <sub>3</sub> )	Carbonate (As CaCO <sub>3</sub> )	Total Alkalinity (as CaCO <sub>3</sub> )	
MW-4	3/12/2013	5,600	7.46	160	< 2.0	160	<b>4,450</b>
MW-4	6/27/2013	5,800	7.36	160	< 2.0	160	<b>4,340</b>
MW-4	3/27/2018	5,400	7.66	146.7	< 2.000	146.7	<b>4,360</b>
MW-4	3/21/2019	5,400	7.16	144.7	< 2.000	144.7	<b>4,170</b>
MW-4	10/28/2019	5,500	7.46	147.6	< 2.000	147.6	<b>4,200</b>
MW-4	9/17/2020	5,300	7.68	141.6	< 2.000	141.6	<b>4,310</b>
MW-4	8/17/2021	5,500	7.27	148.2	< 2.000	148.2	<b>4,200</b>
MW-4	3/21/2022	5,400	7.74	142.7	< 2.000	142.7	<b>4,280</b>
MW-4	8/4/2022	5,400	7.54	140	< 2.000	140	<b>4,640</b>
<b>20.6.2.3103 NMAC GW STANDARDS</b> (<10,000 mg/L)							
<b>A. Human Health Standards</b>							
<b>B. Other Standards for Domestic Water Supply</b>							
<b>C. Standards for Irrigation Use</b>							
Notes: 1. Exceedances of the listed closure criteria are highlighted in bold, red type.							



SOIL TPH, BTEX & CHLORIDE DATA SUMMARY LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/Kg)																		
SAMPLE ID	MAP LOCATION POSITION	DATE	SAMPLE DEPTH	Laboratory Chloride	Field Chloride Low Range	Field Chloride High Range	TPH TOTAL	TPH GRO C6-C10	TPH DRO >C10-C28	TPH MRO >C28-C40	TPH GRO C6-C12	TPH DRO >C12-C35	BTEX	Benzene	Toluene	Ethylbenzene	Xylenes	Comments
Sample #1	---	9/22/1999	---	---	---	---	23,100	<1,000	23,100	---	---	---	0.213	<0.05	<0.05	<0.05	0.213	
Sample #1	---	1/11/2000	---	---	---	---	5,350	---	---	---	---	---	---	---	---	---	---	
140519	---	2/9/2000	---	---	---	---	<10	---	---	---	---	---	---	---	---	---	---	
SB-1	---	10/20/2000	8-9'	886	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-1	---	10/20/2000	14-16'	886	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-2	---	10/20/2000	8-9'	6,736	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-2	---	10/20/2000	13-15'	6,381	---	---	<20	<10	<10	---	---	---	0.276	<0.025	0.058	0.056	0.162	
SB-2	---	10/20/2000	20-21'	7,267	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-3	---	10/20/2000	12.5-14.5'	3,722	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-4	---	10/20/2000	13-15'	2,304	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-5	---	10/20/2000	13-15'	7,445	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-6	---	10/20/2000	14-16'	4,538	---	---	---	---	---	---	---	---	---	---	---	---	---	
Background	---	10/20/2000	0-2'	18	---	---	---	---	---	---	---	---	---	---	---	---	---	
MW-1 35'	---	9/3/2002	35'	390	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-1 58'	---	9/3/2002	58'	35.4	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-1 70'	---	9/3/2002	70'	<20.0	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-2 25'	---	9/3/2002	25'	74.6	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-2 55'	---	9/4/2002	55'	106	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-2 70'	---	9/4/2002	70'	35.4	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-3 15'	---	9/4/2002	15'	177	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-3 35'	---	9/4/2002	35'	382	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-3 65'	---	9/5/2002	65'	<20.0	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-4 20'	---	9/4/2002	20'	2,390	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-4 45'	---	9/5/2002	45'	213	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
MW-4 55'	---	9/5/2002	55'	<20.0	---	---	<10	---	---	---	<10	<10	<0.125	<0.025	<0.025	<0.025	<0.05	
ET1-N 4'	SP-1	8/20/2020	4'	2,200	1,636	2,392	---	---	---	---	---	---	---	---	---	---	---	
ET1-N 8'	SP-1	8/20/2020	8'	2,100	1,760	---	---	---	---	---	---	---	---	---	---	---	---	
ET-1, N, +25'	SP-2	8/20/2020	4'	---	1,524	---	---	---	---	---	---	---	---	---	---	---	---	
ET-1, N, +50'	SP-3	8/20/2020	4'	---	1,224	---	---	---	---	---	---	---	---	---	---	---	---	
ET-1, N, +75'	SP-4	8/20/2020	4'	---	984	---	---	---	---	---	---	---	---	---	---	---	---	
ET-1, N, +100'	SP-5	8/20/2020	4'	---	---	5,076	---	---	---	---	---	---	---	---	---	---	---	
ET-1, N, +125'	SP-6	8/20/2020	4'	---	---	5,492	---	---	---	---	---	---	---	---	---	---	---	
ET-1, N, +150'	SP-7	8/21/2020	4'	---	---	1,996	---	---	---	---	---	---	---	---	---	---	---	
Background (Lattion Back Yard 4')	---	8/20/2020	4'	530	---	---	---	---	---	---	---	---	---	---	---	---	---	East Background
ET-2, S	P-1	8/20/2020	4'	---	---	8,068	---	---	---	---	---	---	---	---	---	---	---	
ET-2, S	P-1	8/20/2020	8'	---	---	11,920	---	---	---	---	---	---	---	---	---	---	---	
ET-2, S, +50'	P-2	8/20/2020	4'	---	---	5,492	---	---	---	---	---	---	---	---	---	---	---	
ET-2, S, +100'	P-3	8/20/2020	4'	---	---	3,104	---	---	---	---	---	---	---	---	---	---	---	
ET2-S, +150', 4'	P-4	8/20/2020	4'	1700	---	1,488	---	---	---	---	---	---	---	---	---	---	---	
ET-2, S, +200'	P-5	8/20/2020	4'	---	580	---	---	---	---	---	---	---	---	---	---	---	---	
NT-1, W	P-6	8/20/2020	4'	---	---	3,380	---	---	---	---	---	---	---	---	---	---	---	
NT-1, W	P-6	8/20/2020	8'	---	---	3,380	---	---	---	---	---	---	---	---	---	---	---	
NT1-W, +25', 4'	P-7	8/20/2020	4'	1,700	1,140	1,488	---	---	---	---	---	---	---	---	---	---	---	
NT-1, W, +50'	P-8	8/20/2020	4'	---	---	3,672	---	---	---	---	---	---	---	---	---	---	---	
NT-2, E	P-9	8/21/2020	4'	---	1,896	1,996	---	---	---	---	---	---	---	---	---	---	---	
NT-2, E	P-9	8/21/2020	8'	---	2,040	2,392	---	---	---	---	---	---	---	---	---	---	---	
NT2-E, +25', 4'	P-10	8/21/2020	4'	2,200	2,040	2,392	---	---	---	---	---	---	---	---	---	---	---	



SOIL TPH, BTEX & CHLORIDE DATA SUMMARY LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/Kg)																		
SAMPLE ID	MAP LOCATION POSITION	DATE	SAMPLE DEPTH	Laboratory Chloride	Field Chloride Low Range	Field Chloride High Range	TPH TOTAL	TPH GRO C6-C10	TPH DRO >C10-C28	TPH MRO >C28-C40	TPH GRO C6-C12	TPH DRO >C12-C35	BTEX	Benzene	Toluene	Ethylbenzene	Xylenes	Comments
NT-2, E, +50'	P-11	8/21/2020	4'	---	2,288	3,104	---	---	---	---	---	---	---	---	---	---	---	
WT-1, N	P-12	8/21/2020	4'	---	1,168	1,200	---	---	---	---	---	---	---	---	---	---	---	
WT-1, N	P-12	8/21/2020	8'	---	648	---	---	---	---	---	---	---	---	---	---	---	---	
WT-1, N, +25'	P-12a	8/21/2020	4'	---	2,464	2,852	---	---	---	---	---	---	---	---	---	---	---	
WT-1, N, +50'	P-13	8/21/2020	4'	---	2,128	2,392	---	---	---	---	---	---	---	---	---	---	---	
WT1-N, +75', 4'	P-14	8/21/2020	4'	660	820	---	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S	P-15	8/21/2020	4'	---	---	4,688	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S	P-15	8/21/2020	8'	---	---	5,076	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S, +25'	P-18	8/21/2020	4'	---	---	3,672	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S, +25-50'	P18-19	8/21/2020	4'	---	---	8,068	---	---	---	---	---	---	---	---	---	---	---	Composite, Liner fragments
WT-2, S, +50'	P-19	8/21/2020	4'	---	---	10,160	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S, +50'	P-19	8/21/2020	8'	---	---	10,160	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S, +75'	P-20	8/21/2020	4'	---	648	---	---	---	---	---	---	---	---	---	---	---	---	
WT-2, S, +100'	P-21	8/21/2020	4'	---	---	11,920	---	---	---	---	---	---	---	---	---	---	---	
WT2-S, +150', 4'	P-22	8/21/2020	4'	670	820	---	---	---	---	---	---	---	---	---	---	---	---	West Background
ST-1, E	P-23	8/21/2020	4'	---	---	10,996	---	---	---	---	---	---	---	---	---	---	---	
ST-1, E	P-23	8/21/2020	8'	---	---	11,920	---	---	---	---	---	---	---	---	---	---	---	
ST1-E, +30', 4'	P-24	8/21/2020	4'	14,000	---	14,136	---	---	---	---	---	---	---	---	---	---	---	
ST-1, E, +60'	P-25	8/21/2020	4'	---	---	11,920	---	---	---	---	---	---	---	---	---	---	---	
ST-1, E, +90'	P-26	8/21/2020	4'	---	---	7,268	---	---	---	---	---	---	---	---	---	---	---	
ST-2, W	P-27	8/21/2020	4'	---	---	4,328	---	---	---	---	---	---	---	---	---	---	---	
ST-2, W	P-27	8/21/2020	8'	---	---	8,328	---	---	---	---	---	---	---	---	---	---	---	
ST-2, W, +30'	P-28	8/21/2020	4'	---	1,984	2,132	---	---	---	---	---	---	---	---	---	---	---	
ST2-W, +60', 4'	P-29	8/21/2020	4'	5,300	---	5,992	---	---	---	---	---	---	---	---	---	---	---	
ST-2, W, +90'	P-30	8/21/2020	4'	---	2,464	2,580	---	---	---	---	---	---	---	---	---	---	---	
T1-S	1	5/28/2021	4'	---	---	3,668	---	---	---	---	---	---	---	---	---	---	---	T1-S, 40 feet south of MW-4
T1-S	1	5/28/2021	8'	5,500	---	5,992	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +50' E	2	5/28/2021	4'	---	---	6,500	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +50' E	2	5/28/2021	8'	---	---	8,328	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +100' E	3	5/28/2021	4'	---	---	6,500	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +100' E	3	5/28/2021	8'	---	---	8,328	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +150' E	4	5/28/2021	4'	---	---	3,412	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +150' E	4	5/28/2021	8'	---	---	1,552	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +200' E	5	5/28/2021	4'	---	---	2,132	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +200' E	5	5/28/2021	8'	---	556	---	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +250' E	6	5/28/2021	4'	870	1,016	---	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +250' E	6	5/28/2021	8'	---	328	---	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +300' E	7	5/28/2021	4'	1,000	1,240	---	---	---	---	---	---	---	---	---	---	---	---	
T1-S, +300' E	7	5/28/2021	8'	---	412	---	---	---	---	---	---	---	---	---	---	---	---	
T2-W	8	5/28/2021	4'	---	---	8,328	---	---	---	---	---	---	---	---	---	---	---	T2-W, 50' west of MW-4
T2-W	8	5/28/2021	8'	---	---	8,328	---	---	---	---	---	---	---	---	---	---	---	
T2-W, +50' N	9	5/28/2021	4'	---	---	9,884	---	---	---	---	---	---	---	---	---	---	---	
T2-W, +50' N	9	5/28/2021	8'	---	---	7,056	---	---	---	---	---	---	---	---	---	---	---	
T2-W, +50' S	10	5/28/2021	4'	---	---	6,500	---	---	---	---	---	---	---	---	---	---	---	
T2-W, +50' S	10	5/28/2021	8'	---	---	9,884	---	---	---	---	---	---	---	---	---	---	---	
T3-W	11	5/28/2021	4'	---	---	11,832	---	---	---	---	---	---	---	---	---	---	---	T3-W, 100' west of MW-4
T3-W	11	5/28/2021	8'	---	---	9,064	---	---	---	---	---	---	---	---	---	---	---	
T3-W, +50' N	12	5/28/2021	4'	---	---	5,528	---	---	---	---	---	---	---	---	---	---	---	
T3-W, +50' N	12	5/28/2021	8'	---	---	5,528	---	---	---	---	---	---	---	---	---	---	---	
T3-W, +100' N	13	5/28/2021	4'	---	---	3,988	---	---	---	---	---	---	---	---	---	---	---	
T3-W, +100' N	13	5/28/2021	8'	1,200	1,240	---	---	---	---	---	---	---	---	---	---	---	---	



SOIL TPH, BTEX & CHLORIDE DATA SUMMARY LATTION PIT EDDY COUNTY, NEW MEXICO AP-23  All Values Presented in Parts Per Million (mg/Kg)																				
SAMPLE ID	MAP LOCATION POSITION	DATE	SAMPLE DEPTH	Laboratory Chloride	Field Chloride Low Range	Field Chloride High Range	TPH TOTAL	TPH GRO C6-C10	TPH DRO >C10-C28	TPH MRO >C28-C40	TPH GRO C6-C12	TPH DRO >C12-C35	BTEX	Benzene	Toluene	Ethylbenzene	Xylenes	Comments		
T3-W, +50' S	14	5/28/2021	4'	---	2,260	---	---	---	---	---	---	---	---	---	---	---	---			
T3-W, +50' S	14	5/28/2021	8'	---	---	3,668	---	---	---	---	---	---	---	---	---	---	---			
T4-W	15	5/28/2021	4'	---	---	3,368	---	---	---	---	---	---	---	---	---	---	---	T4-W, 150' west of MW-4		
T4-W	15	5/28/2021	8'	1,600	1,628	1,552	---	---	---	---	---	---	---	---	---	---				
T5-W	16	5/28/2021	4'	---	---	3,668	---	---	---	---	---	---	---	---	---	---	---	T5-W, 200' west of MW-4		
T5-W	16	5/28/2021	8'	---	1,240	---	---	---	---	---	---	---	---	---	---	---				
T6-W	17	5/28/2021	4'	---	420	---	---	---	---	---	---	---	---	---	---	---	---	T6-W, 250' west of MW-4		
T6-W	17	5/28/2021	8'	---	860	---	---	---	---	---	---	---	---	---	---	---				
T7-W	18	5/28/2021	4'	450	640	---	---	---	---	---	---	---	---	---	---	---	---	T7-W, 300' west of MW-4		
T7-W	18	5/28/2021	8'	---	328	---	---	---	---	---	---	---	---	---	---	---				
T1-N	19	5/28/2021	4'	---	---	8,328	---	---	---	---	---	---	---	---	---	---	---	T1-N, 25' north of MW-4		
T1-N	19	5/28/2021	8'	---	---	8,328	---	---	---	---	---	---	---	---	---	---				
T1-N, +50' E	20	5/28/2021	4'	---	---	2,580	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +50' E	20	5/28/2021	8'	---	---	3,988	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +100' E	21	5/28/2021	4'	---	---	3,088	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +100' E	21	5/28/2021	8'	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +150' E	22	5/28/2021	4'	---	---	3,988	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +150' E	22	5/28/2021	8'	---	---	5,528	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +200' E	23	5/28/2021	4'	---	---	2,580	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +200' E	23	5/28/2021	8'	---	292	---	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +250' E	24	5/28/2021	4'	---	---	2,260	---	---	---	---	---	---	---	---	---	---	---			
T1-N, +250' E	24	5/28/2021	8'	---	196	---	---	---	---	---	---	---	---	---	---	---	---			
T2-N	25	5/28/2021	4'	---	1,836	---	---	---	---	---	---	---	---	---	---	---	---	T2-N, 75' north of MW-4		
T2-N	25	5/28/2021	8'	810	860	---	---	---	---	---	---	---	---	---	---	---				
T1-E	26	5/28/2021	4'	9,900	---	14,332	---	---	---	---	---	---	---	---	---	---	---	T1E, 75' east of MW-4		
T1-E	26	5/28/2021	8'	---	---	11,832	---	---	---	---	---	---	---	---	---	---				
19.15.29.12 Table 1 Closure Criteria (GW ≤50')																				
				600	600	600	100												50	10
Notes: 1. Exceedances of the listed closure criteria are highlighted in bold, red type.																				



## ATTACHMENT 1 – SOIL BORING LOGS



# Soil Boring SB-1

## Legend

- PID Head-space reading in ppm obtained with a photo-ionization detector.
- Indicates samples selected for laboratory analysis.



## Soil Boring Details

Date Drilled 10 / 20 / 00

Plugged - Surface to TD with Bentonite and hydrated with deionized water.

## Soil Boring Log Details

Soil Boring SB-1

Yates Pet Corp. Lattion Pit Eddy, NM



Environmental Technology Group, Inc.

Scale: NTS Prep By: RS Checked By: KD  
November 2, 2009 ETGI Project # YPC 22000



# Soil Boring SB-2

Depth (feet)	Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0					
5					Backfill - Mixed, Sandy Loam/Sand.
10		1.2	None	None	Sand - (SP) - Red-Brown, very fine grained, well sorted, interbedded with caliche nodules.
12		0.0	None	None	Clay layer - heavy plasticity.
15		0.0	None	None	Caliche layer
20					
25					Sand - (SP) - Red-Brown, very fine grained, well sorted, interbedded with caliche nodules.
30					Clay layer - heavy plasticity.
35					
40					Sand - (SC) - Brown-Black, very fine grained, well sorted.
45		0.0	None	None	
50					

## Legend

- PID Head-space reading in ppm obtained with a photo-ionization detector.
- Indicates samples selected for laboratory analysis.

## Soil Boring Details

Date Drilled 10/20/00

Plugged - Surface to TD with Bentonite and hydrated with deionized water.

## Soil Boring Log Details

Soil Boring SB-2

Yates Pet Corp. Lattion Pit Eddy, NM



Environmental Technology  
Group, Inc.

Scale: NTS Prep By: RS Checked By: KD  
November 2, 2000 ETGI Project # YPC 2200D



# Soil Boring SB-3

## Legend

- PID Head-space reading in ppm obtained with a photo-ionization detector.
- Indicates samples selected for laboratory analysis.

Depth (feet)	Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
--------------	--------------	-------------	----------------	-----------------	------------------



## Soil Boring Details

Date Drilled 10 / 20 / 00

Plugged - Surface to TD with Bentonite and hydrated with deionized water.

## Soil Boring Log Details

Soil Boring SB-3

Yates Pet Corp. Lattion Pit Eddy, NM



Environmental Technology Group, Inc.

Scale: NTS Prep By: RS Checked By: KD

November 2, 2000 ETGI Project # YPC 22000



# Soil Boring SB-4

## Legend

PID Head-space reading in ppm obtained with a photo-ionization detector.  
 ○ Indicates samples selected for laboratory analysis.



## Soil Boring Details

Date Drilled 10/20/00

Plugged - Surface to TD with Bentonite and hydrated with deionized water.

## Soil Boring Log Details

Soil Boring SB-4

Yates Pet Corp. Lattion Pit Eddy, NM



Environmental Technology Group, Inc.

Scale: NTS	Prep By: RS	Checked By: KD
November 2, 2000		ETGI Project # YPC22000



# Soil Boring SB-5

## Legend

- PID Head-space reading in ppm obtained with a photo-ionization detector.
- Indicates samples selected for laboratory analysis.



## Soil Boring Details

Date Drilled 10/20/00

Plugged - Surface to TD with Bentonite and hydrated with deionized water.

## Soil Boring Log Details

Soil Boring SB-5

Yates Pet Corp. Lattion Pit Eddy, NM



Environmental Technology Group, Inc.

Scale: NTS Prep By: RS Checked By: KD

November 2, 2000 ETGI Project # YPC-22000



# Soil Boring SB-6

## Legend

- PID Head-space reading in ppm obtained with a photo-ionization detector
- Indicates samples selected for laboratory analysis

Depth  
(feet)Soil  
ColumnsPID  
ReadingPetroleum  
OdorPetroleum  
Stain

Soil Description

0

5

10

15

20

Backfill - Mixed, Sandy Loam/Sand.

Caliche layer

0.2

None

None

Sand - (SP) - Red-Brown, very fine grained, well sorted, interbedded with caliche nodules.

TD

## Soil Boring Details

Date Drilled 10 / 20 / 00

Plugged - Surface to TD with Bentonite and hydrated with deionized water.

## Soil Boring Log Details

Soil Boring SB-6

Yates Pet Corp. Lattion Pit Eddy, NM

Environmental Technology  
Group, Inc.

Scale: NTS	Prep By: RS	Checked By: KJ
November 2, 2000	ETGI Project # YPC 22000	



## Monitoring Well MW - 1

Depth (feet)	Soil Column	PID Reading	Odor	Stain	Notes
0					
5		2.1	Strong	Heavy	
10		1.5	Strong	Heavy	
15		1.1	Strong	Heavy	
20		1.4	None	None	
25		0.8	None	Minor	
30		0.9	None	Trace	
35		(1.0)	None	None	
40		1.3	None	None	
45		1.6	None	None	
50		1.8	None	None	
55		2.5	None	None	Damp
60		(1.9)	None	None	Damp
65		1.5	None	None	Wet
70		(0.9)	None	None	Damp
75					



## Monitoring Well Details

Date Drilled	9-3-02
Thickness of Bentonite Seal	2 ft
Length of PVC Well Screen	35 ft
Depth of PVC Well	70 ft
Depth of Exploratory Well	70 ft
Depth to Ground Water	57 ft

- Gravel Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen

## Legend

- Silty Sand - (SM) - Grayish Orange, Very Fine Grained, Well Sorted, Dry, Loose.
- Silty Sand - (SM) - Grayish Orange, Very Fine to Fine Grained, Sub-Angular, Loose.
- Sand - (SP) - Very Pale Orange to Grayish Orange, Very Fine to Fine Grained, Loose.
- Sandy Gravel - (GP) - Moderate Yellow to Pale Yellowish-Orange, Moderately Sorted, Dry.
- Clay - (CL) - Moderate Greenish-Yellow, Soft, Dry.
- Sandy Clay - (SC) - Pale Greenish Yellow, Moderate Soft to Firm, Damp.
- Clay - (CL) - Yellowish Gray, Slightly Sandy, Slightly Fractured, Soft to Medium Firm, Damp.
- Clay - (CL) - Medium Dark Gray, Moderate Firm, Slightly Damp.
- Clay - (CL) - Medium Gray and Moderate Greenish Yellow, Soft to Stiff, Damp.
- Clay - (CL) - Dark Gray, Stiff, Dry.
- Clay - (CL) - Medium Dark Gray, Medium Soft, Slightly Damp.
- Gravel - (GP) - Dark Yellowish Brown, Very Poorly Sorted, Fine to Cobble Sized, Slightly Sandy, Wet.
- Clay - (CL) - Medium Dark Gray, Medium Soft, Slightly Damp.

- Indicates samples selected for laboratory analysis.
- Indicates the ground water level measured on date.
- PID - Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- The monitoring well was installed on site using hollow stem auger drilling techniques.
- The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- The well is protected with a locked slide up steel cover and a compression cap.
- The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- The depths indicated are referenced from the ground surface.

## Boring Log And Monitoring Well Detail

## Monitoring Well - 1

Yates Petroleum.

Former Lattion Pit Site

Eddy County, NM

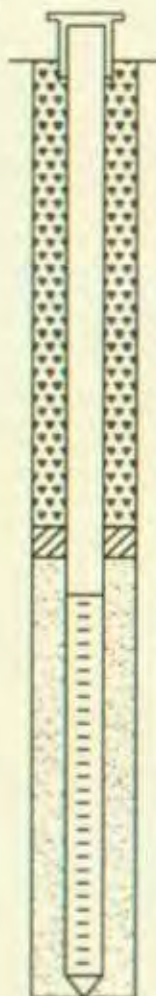
Environmental Technology  
Group, Inc.

Scale: see scale	Prep By: LGM	Checked By: RE
Date: 11, 2002	ETG Project # 1A2218	
NE 1/4 of the SW 1/4 of Section 23, Township 1N, South, Range 2E East		



## Monitoring Well MW - 2

Depth (feet)	Soil Column	PID Reading	Odor	Stain	Notes
0					
5		2.7	None	None	
10		1.1	None	None	
15		0.9	None	None	
20		0.7	None	None	
25		0.7	None	None	
30		0.5	None	None	
35		0.5	None	None	
40		0.5	None	None	
45		0.6	None	None	
50		1.5	None	None	
55		1.3	None	None	
60		1.4	None	None	
65		1.2	None	None	
70		1.1	None	None	Well
75					



## Monitoring Well Details

Date Drilled	9 - 3 - 02
Thickness of Bentonite Seal	3 ft
Length of PVC Well Screen	30 ft
Depth of PVC Well	70 ft
Depth of Exploratory Well	70 ft
Depth to Ground Water	61 ft



## Legend

	Sandy Clay - (SC) - Moderate Yellowish-Brown, Soft to Medium Soft.
	Sandy Clay - (SC) - Dark Yellowish Orange, Soft, Dry.
	Sandy Clay - (CL) - Dark Yellowish Orange, Soft Dry, Imbedded Caliche.
	Sandy Clay - (OL) - Grayish Orange, Very Stiff, Dry.
	Sandy Clay - (OL) - Light Brown, Stiff, Dry.
	Clay - (CL) - Very Pale Orange, Medium Soft, Dry.
	Clay - (CL) - Yellowish Gray, Medium Soft, Dry.
	Clay - (CL) - Light Brown, Soft, Course Sand to Fine Gravel, Chert, Coarse Imbedded in Clay, Wet.

○ Indicates samples selected for laboratory analysis.

⬇ Indicates the ground water level measured on date.

PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

1. The monitoring well was installed on date using hollow stem auger drilling techniques.
2. The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3. The well is protected with a locked stick up steel cover and a compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface.

## Boring Log And Monitoring Well Detail

## Monitoring Well - 2

Yates Petroleum.

Former Lutton Pit Site

Eddy County, NM



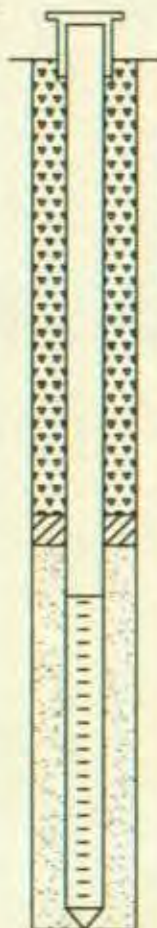
## Environmental Technology Group, Inc.

Scale: use scale	Prep By: LGM	Checked By: RE
Oct. 17, 2002	ETGI Project # YA2218	
NE 1/4 of the SW 1/4 of Section 23, Township 18 South, Range 20 East		



## Monitoring Well MW - 3

Depth (feet)	Soil Column	PID Reading	Odor	Stain	Notes
0					
5		1.3	None	None	
10		11	None	None	
15		1.5	None	None	
20		0.7	None	None	
25		1.1	None	None	
30		0.9	None	None	
35		0.8	None	Black Dendritic Staining	
40		1.2	None	None	
45		1.0	None	None	
50		1.1	None	None	Moist
55		1.2	None	None	Wet
60		1.0	None	None	Wet
65		0.4	None	None	Wet
70					
75					



## Monitoring Well Details

Date Drilled	9 - 4 - 02
Thickness of Bentonite Seal	3 ft
Length of PVC Well Screen	25 ft
Depth of PVC Well	65 ft
Depth of Exploratory Well	65 ft
Depth to Ground Water	52 ft

- Grout Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen

## Legend

- Silty Sand - (SM) - Dark Yellowish-Orange, Very Fine Grained, Loose
- Sandy Clay - (SM) - Moderate Brown, Soft, Imbedded Caliche, With Sandy Veins.
- Sandy Clay - (CL) - Grayish Orange, Medium Soft to Stiff, Sporadic Caliche Filled Veins.
- Sand - (SP) - Grayish Orange to Very Pale Orange, Very Fine to Fine Grained, Loose, Dry.
- Clay - (OL) - Light Olive to Grayish Olive, Stiff, Slickenside, Slightly Sandy.
- Clay - (OL) - Dark Yellowish Orange, Moderate Stiff, Sand to Gravel Sized Qtz and Chert Imbedded.
- Silty Sand - (SM) - Very Pale Orange, Very Fine Grained, Well Sorted, Loose.
- Clay - (CL) - Light Olive to Light Olive Brown, Medium Soft to Stiff, Wet.
- Sandy Clay - (CL) - Dark Yellowish Orange and Grayish Olive Green, Moderately Soft, Wet.
- Clay - (CL) - Dark Yellowish Brown, Very Soft, Wet.

Indicates samples selected for laboratory analysis.

Indicates the ground water level measured on date.

PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- The monitoring well was installed on date using hollow stem auger drilling techniques.
- The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- The well is protected with a locked stick up steel cover and a compression cap.
- The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- The depths indicated are referenced from the ground surface.

## Boring Log And Monitoring Well Detail

## Monitoring Well - 3

Yates Petroleum.

Former Lattion Pit Site

Eddy County, NM

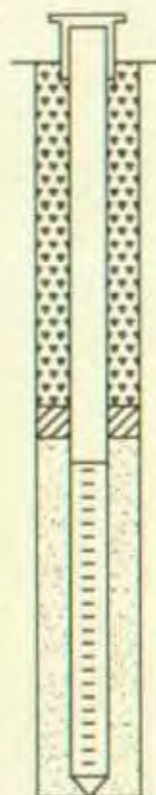
Environmental Technology  
Group, Inc.

Scale: use scale	Prep By: LGM	Checked By: RE
Oct. 17, 2002	ETGI Project # YA2218	
NE 1/4 of the SW 1/4 of Section 23, Township 18 South, Range 20 East		



## Monitoring Well MW - 4

Depth (feet)	Soil Column	PID Reading	Odor	Stain	Notes
0					
5		1.1	None	None	
10		0.8	None	None	
15		0.6	None	None	
20		0.5	None	None	
25		0.3	None	Slight	
30		0.5	None	None	
35		0.8	None	None	
40		0.4	None	None	Moist
45		3.3	None	None	Wet
50		0.9	None	None	Wet
55		0.1	None	None	Wet
60					
65					
70					
75					



## Monitoring Well Details

Date Drilled	8 - 4 - 02
Thickness of Bentonite Seal	3 ft
Length of PVC Well Screen	25 ft
Depth of PVC Well	55 ft
Depth of Exploratory Well	55 ft
Depth to Ground Water	45 ft

- Grout Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen

## Legend

- Sandy Clay - (SM) - Grayish-Orange to Dark Orange, Soft, Backfill Material.
- Sandy Clay - (SM) - Moderate Brown, Soft, Backfill Material.
- Sandy Gravel - (GP) - Grayish Orange, Medium Sand to coarse Gravel, Backfill Material.
- Sandy Clay - (SC) - Moderate Orange Pink, Moderate Soft to Stiff.
- Sandy Gravel - (OL) - Grayish Orange, Fine Gravel.
- Sandy Clay - (OL) - Dark Yellowish Orange, Soft.
- Clay - (CL) - Pale Greenish Yellow, Stiff.
- Clay - (CL) - Light Olive to Light Olive Brown, Medium Soft to Stiff.
- Sandy Gravel - (GP) - Very Pale Orange, Fine Sand to Coarse Gravel.
- Clay - (CL) - Pale Yellowish Brown to Moderate Brown, Stiff to Medium Soft.
- Clay - (CL) - Pale Greenish Yellow and Pale Yellowish Orange, Medium Soft, Damp.
- Sandy Clay - (SC) - Light Olive Brown to Very Pale Orange, Soft, Gravelly, Wet.
- Clay - (ML) - Grayish Olive Green, Dry, Stiff.

Indicates samples selected for laboratory analysis.

Indicates the ground water level measured on date.

PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- The monitoring well was installed on date using hollow stem auger drilling techniques.
- The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- The well is protected with a locked stick up steel cover and a compression cap.
- The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- The depths indicated are referenced from the ground surface.

## Boring Log And Monitoring Well Detail

## Monitoring Well - 4

Yates Petroleum.

Former Lutton Pit Site

Eddy County, NM

Environmental Technology  
Group, Inc.

Scale: see scale	Prep By: LGM	Checked By: RE
Date: 11/20/02	ETGI Project # YA2218	
NE 1/4 of the SW 1/4 of Section 23, Township 18 South, Range 28 East		



## ATTACHMENT 2 – CURRENT SITE PHOTOGRAPHS





**PHOTOGRAPH NO. 1 – A current former western pit location with monitor well “MW-4” visible. The view is towards the northwest.**

(Approximate GPS: 32.729102,-104.349881)





**PHOTOGRAPH NO. 2 – A view of the approximate former eastern pit area and monitor wells “MW-4” and “MW-3”. The view is towards the northeast.** (Approximate GPS: 32.728827, -104.349882)



## ATTACHMENT 3 – LABORATORY ANALYTICAL REPORTS (2005 - 2022)





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 12, 2012

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 390-7067  
FAX: (575) 393-4388

RE: Yates Lattion Battery Pit

OrderNo.: 1203709

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/20/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 9:15:00 AM

Lab ID: 1203709-001

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	ND	2.0		mg/L	20	3/21/2012 9:20:14 AM
Chloride	1,400	100		mg/L	200	3/22/2012 10:37:14 PM
Bromide	2.5	2.0		mg/L	20	3/21/2012 9:20:14 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/22/2012 8:57:58 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/21/2012 9:20:14 AM
Sulfate	1,900	50		mg/L	100	3/22/2012 10:24:49 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.020	0.0020		mg/L	1	3/29/2012 9:06:15 AM
Cadmium	ND	0.0020		mg/L	1	3/29/2012 9:06:15 AM
Calcium	880	10		mg/L	10	3/29/2012 9:11:06 AM
Chromium	ND	0.0060		mg/L	1	3/29/2012 9:06:15 AM
Copper	ND	0.0060		mg/L	1	3/29/2012 9:06:15 AM
Iron	0.41	0.020	*	mg/L	1	4/1/2012 1:27:02 PM
Lead	ND	0.0050		mg/L	1	3/29/2012 9:06:15 AM
Magnesium	350	10		mg/L	10	3/29/2012 9:11:06 AM
Manganese	0.032	0.0020		mg/L	1	3/29/2012 9:06:15 AM
Potassium	4.8	1.0		mg/L	1	3/29/2012 9:06:15 AM
Silver	ND	0.0050		mg/L	1	3/29/2012 9:06:15 AM
Sodium	290	10		mg/L	10	3/29/2012 9:11:06 AM
Zinc	0.015	0.010		mg/L	1	4/1/2012 1:27:02 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0015	0.0010		mg/L	1	3/26/2012 6:14:18 PM
Selenium	0.0052	0.0010		mg/L	1	3/26/2012 6:14:18 PM
Uranium	0.0020	0.0010		mg/L	1	4/9/2012 4:47:58 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>JLF</b>
Mercury	ND	0.00020		mg/L	1	3/22/2012 3:59:10 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>RAA</b>
Benzene	ND	2.0		µg/L	2	3/22/2012 1:24:03 AM
Toluene	ND	2.0		µg/L	2	3/22/2012 1:24:03 AM
Ethylbenzene	ND	2.0		µg/L	2	3/22/2012 1:24:03 AM
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	3/22/2012 1:24:03 AM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	2	3/22/2012 1:24:03 AM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	3/22/2012 1:24:03 AM
Naphthalene	ND	4.0		µg/L	2	3/22/2012 1:24:03 AM
1-Methylnaphthalene	ND	8.0		µg/L	2	3/22/2012 1:24:03 AM
2-Methylnaphthalene	ND	8.0		µg/L	2	3/22/2012 1:24:03 AM
Xylenes, Total	ND	4.0		µg/L	2	3/22/2012 1:24:03 AM
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%REC	2	3/22/2012 1:24:03 AM
Surr: 4-Bromofluorobenzene	96.3	70-130		%REC	2	3/22/2012 1:24:03 AM
Surr: Dibromofluoromethane	81.4	69.8-130		%REC	2	3/22/2012 1:24:03 AM

**Qualifiers:** \* / X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit



## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 9:15:00 AM

Lab ID: 1203709-001

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: RAA
Surr: Toluene-d8	98.4	70-130		%REC	2	3/22/2012 1:24:03 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JLF
Conductivity	6,300	0.010		µmhos/cm	1	3/21/2012 11:04:30 AM
<b>SM4500-H+B: PH</b>						Analyst: JLF
pH	7.07	1.68	H	pH units	1	3/21/2012 11:04:30 AM
<b>SM2320B: ALKALINITY</b>						Analyst: JLF
Bicarbonate (As CaCO <sub>3</sub> )	170	20		mg/L CaCO <sub>3</sub>	1	3/21/2012 11:04:30 AM
Carbonate (As CaCO <sub>3</sub> )	ND	2.0		mg/L CaCO <sub>3</sub>	1	3/21/2012 11:04:30 AM
Total Alkalinity (as CaCO <sub>3</sub> )	170	20		mg/L CaCO <sub>3</sub>	1	3/21/2012 11:04:30 AM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	5,080	100		mg/L	1	3/23/2012 2:44:00 PM

**Qualifiers:**

\* / X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 9:45:00 AM

Lab ID: 1203709-002

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	ND	2.0		mg/L	20	3/21/2012 9:45:03 AM
Chloride	1,200	50		mg/L	100	3/22/2012 10:49:39 PM
Bromide	ND	2.0		mg/L	20	3/21/2012 9:45:03 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/22/2012 9:10:23 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/21/2012 9:45:03 AM
Sulfate	1,800	50		mg/L	100	3/22/2012 10:49:39 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.016	0.0020		mg/L	1	3/29/2012 9:14:00 AM
Cadmium	ND	0.0020		mg/L	1	3/29/2012 9:14:00 AM
Calcium	780	10		mg/L	10	3/29/2012 9:17:18 AM
Chromium	ND	0.0060		mg/L	1	3/29/2012 9:14:00 AM
Copper	ND	0.0060		mg/L	1	3/29/2012 9:14:00 AM
Iron	0.071	0.020		mg/L	1	4/1/2012 1:33:44 PM
Lead	ND	0.0050		mg/L	1	3/29/2012 9:14:00 AM
Magnesium	310	10		mg/L	10	3/29/2012 9:17:18 AM
Manganese	0.051	0.0020	*	mg/L	1	3/29/2012 9:14:00 AM
Potassium	3.6	1.0		mg/L	1	3/29/2012 9:14:00 AM
Silver	ND	0.0050		mg/L	1	3/29/2012 9:14:00 AM
Sodium	200	10		mg/L	10	3/29/2012 9:17:18 AM
Zinc	0.012	0.010		mg/L	1	4/1/2012 1:33:44 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0014	0.0010		mg/L	1	3/26/2012 6:16:10 PM
Selenium	0.0042	0.0010		mg/L	1	3/26/2012 6:16:10 PM
Uranium	0.0036	0.0010		mg/L	1	4/9/2012 4:51:54 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>JLF</b>
Mercury	ND	0.00020		mg/L	1	3/22/2012 4:00:55 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>RAA</b>
Benzene	ND	1.0		µg/L	1	3/22/2012 2:48:02 AM
Toluene	ND	1.0		µg/L	1	3/22/2012 2:48:02 AM
Ethylbenzene	ND	1.0		µg/L	1	3/22/2012 2:48:02 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/22/2012 2:48:02 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/22/2012 2:48:02 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/22/2012 2:48:02 AM
Naphthalene	ND	2.0		µg/L	1	3/22/2012 2:48:02 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/22/2012 2:48:02 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	3/22/2012 2:48:02 AM
Xylenes, Total	ND	2.0		µg/L	1	3/22/2012 2:48:02 AM
Surr: 1,2-Dichloroethane-d4	94.9	70-130		%REC	1	3/22/2012 2:48:02 AM
Surr: 4-Bromofluorobenzene	87.5	70-130		%REC	1	3/22/2012 2:48:02 AM
Surr: Dibromofluoromethane	82.8	69.8-130		%REC	1	3/22/2012 2:48:02 AM

**Qualifiers:** \* / X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

CLIENT: Safety & Environmental Solutions Client Sample ID: MW-4  
Project: Yates Lattion Battery Pit Collection Date: 3/17/2012 9:45:00 AM  
Lab ID: 1203709-002 Matrix: AQUEOUS Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: RAA
Surr: Toluene-d8	96.8	70-130		%REC	1	3/22/2012 2:48:02 AM
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: JLF
Conductivity	5,400	0.010		µmhos/cm	1	3/21/2012 11:19:37 AM
SM4500-H+B: PH						Analyst: JLF
pH	7.16	1.68	H	pH units	1	3/21/2012 11:19:37 AM
SM2320B: ALKALINITY						Analyst: JLF
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	3/21/2012 11:19:37 AM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	3/21/2012 11:19:37 AM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	3/21/2012 11:19:37 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	4,470	100		mg/L	1	3/23/2012 2:44:00 PM

Qualifiers:	* / X	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 10:05:00 AM

Lab ID: 1203709-003

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	ND	2.0		mg/L	20	3/21/2012 10:09:53 AM
Chloride	42	10		mg/L	20	3/21/2012 10:09:53 AM
Bromide	0.13	0.10		mg/L	1	3/21/2012 9:57:28 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/22/2012 9:22:47 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/21/2012 9:57:28 AM
Sulfate	950	10		mg/L	20	3/21/2012 10:09:53 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.019	0.0020		mg/L	1	3/29/2012 9:20:18 AM
Cadmium	ND	0.0020		mg/L	1	3/29/2012 9:20:18 AM
Calcium	270	10		mg/L	10	3/29/2012 9:23:25 AM
Chromium	ND	0.0060		mg/L	1	3/29/2012 9:20:18 AM
Copper	ND	0.0060		mg/L	1	3/29/2012 9:20:18 AM
Iron	ND	0.020		mg/L	1	4/1/2012 1:40:21 PM
Lead	ND	0.0050		mg/L	1	3/29/2012 9:20:18 AM
Magnesium	100	10		mg/L	10	3/29/2012 9:23:25 AM
Manganese	0.042	0.0020		mg/L	1	3/29/2012 9:20:18 AM
Potassium	2.7	1.0		mg/L	1	3/29/2012 9:20:18 AM
Silver	ND	0.0050		mg/L	1	3/29/2012 9:20:18 AM
Sodium	34	1.0		mg/L	1	3/29/2012 9:20:18 AM
Zinc	0.016	0.010		mg/L	1	4/1/2012 1:40:21 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0012	0.0010		mg/L	1	3/26/2012 6:18:02 PM
Selenium	ND	0.0010		mg/L	1	3/26/2012 6:18:02 PM
Uranium	ND	0.0010		mg/L	1	4/9/2012 4:55:50 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>JLF</b>
Mercury	ND	0.00020		mg/L	1	3/22/2012 4:02:49 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>RAA</b>
Benzene	ND	1.0		µg/L	1	3/22/2012 3:16:14 AM
Toluene	ND	1.0		µg/L	1	3/22/2012 3:16:14 AM
Ethylbenzene	ND	1.0		µg/L	1	3/22/2012 3:16:14 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/22/2012 3:16:14 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/22/2012 3:16:14 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/22/2012 3:16:14 AM
Naphthalene	ND	2.0		µg/L	1	3/22/2012 3:16:14 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/22/2012 3:16:14 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	3/22/2012 3:16:14 AM
Xylenes, Total	ND	2.0		µg/L	1	3/22/2012 3:16:14 AM
Surr: 1,2-Dichloroethane-d4	91.5	70-130		%REC	1	3/22/2012 3:16:14 AM
Surr: 4-Bromofluorobenzene	91.1	70-130		%REC	1	3/22/2012 3:16:14 AM
Surr: Dibromofluoromethane	77.6	69.8-130		%REC	1	3/22/2012 3:16:14 AM

**Qualifiers:** \* / X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit

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## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 10:05:00 AM

Lab ID: 1203709-003

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: RAA
Surr: Toluene-d8	93.8	70-130		%REC	1	3/22/2012 3:16:14 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JLF
Conductivity	1,800	0.010		µmhos/cm	1	3/21/2012 11:34:28 AM
<b>SM4500-H+B: PH</b>						Analyst: JLF
pH	7.43	1.68	H	pH units	1	3/21/2012 11:34:28 AM
<b>SM2320B: ALKALINITY</b>						Analyst: JLF
Bicarbonate (As CaCO <sub>3</sub> )	180	20		mg/L CaCO <sub>3</sub>	1	3/21/2012 11:34:28 AM
Carbonate (As CaCO <sub>3</sub> )	ND	2.0		mg/L CaCO <sub>3</sub>	1	3/21/2012 11:34:28 AM
Total Alkalinity (as CaCO <sub>3</sub> )	180	20		mg/L CaCO <sub>3</sub>	1	3/21/2012 11:34:28 AM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	1,590	20.0		mg/L	1	3/23/2012 2:44:00 PM

**Qualifiers:**

\* / X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 10:30:00 AM

Lab ID: 1203709-004

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	1.3	0.50		mg/L	5	3/28/2012 7:04:21 AM
Chloride	790	25		mg/L	50	3/22/2012 11:14:28 PM
Bromide	1.0	0.10		mg/L	1	3/21/2012 10:47:09 AM
Nitrate+Nitrite as N	2.2	1.0		mg/L	5	3/22/2012 9:35:12 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/21/2012 10:47:09 AM
Sulfate	1,200	25		mg/L	50	3/22/2012 11:14:28 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.014	0.0020		mg/L	1	3/29/2012 9:38:15 AM
Cadmium	ND	0.0020		mg/L	1	3/29/2012 9:38:15 AM
Calcium	570	10		mg/L	10	3/29/2012 9:41:29 AM
Chromium	ND	0.0060		mg/L	1	3/29/2012 9:38:15 AM
Copper	ND	0.0060		mg/L	1	3/29/2012 9:38:15 AM
Iron	0.044	0.020		mg/L	1	4/1/2012 1:48:37 PM
Lead	ND	0.0050		mg/L	1	3/29/2012 9:38:15 AM
Magnesium	180	10		mg/L	10	3/29/2012 9:41:29 AM
Manganese	0.0027	0.0020		mg/L	1	3/29/2012 9:38:15 AM
Potassium	4.6	1.0		mg/L	1	3/29/2012 9:38:15 AM
Silver	ND	0.0050		mg/L	1	3/29/2012 9:38:15 AM
Sodium	81	1.0		mg/L	1	3/29/2012 9:38:15 AM
Zinc	ND	0.010		mg/L	1	4/1/2012 1:48:37 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0019	0.0010		mg/L	1	3/26/2012 6:19:54 PM
Selenium	0.025	0.0010		mg/L	1	3/26/2012 6:19:54 PM
Uranium	0.0061	0.0010		mg/L	1	4/10/2012 6:47:42 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>JLF</b>
Mercury	ND	0.00020		mg/L	1	3/22/2012 4:04:39 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>RAA</b>
Benzene	ND	1.0		µg/L	1	3/22/2012 3:44:17 AM
Toluene	ND	1.0		µg/L	1	3/22/2012 3:44:17 AM
Ethylbenzene	ND	1.0		µg/L	1	3/22/2012 3:44:17 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/22/2012 3:44:17 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/22/2012 3:44:17 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/22/2012 3:44:17 AM
Naphthalene	ND	2.0		µg/L	1	3/22/2012 3:44:17 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/22/2012 3:44:17 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	3/22/2012 3:44:17 AM
Xylenes, Total	ND	2.0		µg/L	1	3/22/2012 3:44:17 AM
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%REC	1	3/22/2012 3:44:17 AM
Surr: 4-Bromofluorobenzene	92.0	70-130		%REC	1	3/22/2012 3:44:17 AM
Surr: Dibromofluoromethane	83.6	69.8-130		%REC	1	3/22/2012 3:44:17 AM

**Qualifiers:** \* / X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit

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## Analytical Report

Lab Order 1203709

Date Reported: 4/12/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Yates Lattion Battery Pit

Collection Date: 3/17/2012 10:30:00 AM

Lab ID: 1203709-004

Matrix: AQUEOUS

Received Date: 3/20/2012 12:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: RAA
Surr: Toluene-d8	97.6	70-130		%REC	1	3/22/2012 3:44:17 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JLF
Conductivity	3,800	0.010		µmhos/cm	1	3/21/2012 12:37:18 PM
<b>SM4500-H+B: PH</b>						Analyst: JLF
pH	7.28	1.68	H	pH units	1	3/21/2012 12:37:18 PM
<b>SM2320B: ALKALINITY</b>						Analyst: JLF
Bicarbonate (As CaCO <sub>3</sub> )	150	20		mg/L CaCO <sub>3</sub>	1	3/21/2012 12:37:18 PM
Carbonate (As CaCO <sub>3</sub> )	ND	2.0		mg/L CaCO <sub>3</sub>	1	3/21/2012 12:37:18 PM
Total Alkalinity (as CaCO <sub>3</sub> )	150	20		mg/L CaCO <sub>3</sub>	1	3/21/2012 12:37:18 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	3,090	40.0		mg/L	1	3/23/2012 2:44:00 PM

**Qualifiers:**

\* / X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2		
	1203709-001		1203709-002		1203709-003		1203709-004		
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sodium	290	12.61	200	8.70	34	1.48	81	3.52	
Potassium	4.8	0.12	3.6	0.09	2.7	0.07	4.6	0.12	
Calcium	880	43.91	780	38.92	270	13.47	570	28.44	
Magnesium	350	28.81	310	25.51	100	8.23	180	14.81	
<b>Total Cations</b>		85.46		73.23		23.25		46.90	
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sulfate	1900	39.56	1800	37.48	950	19.78	1200	24.98	
Chloride	1400	39.49	1200	33.85	42	1.18	790	22.28	
Bicarbonate (CaCO <sub>3</sub> )	170	3.40	160	3.20	180	3.60	150	3.00	
Carbonate (CaCO <sub>3</sub> )	ND	*	ND	*	ND	*	ND	*	
Phosphate (P)	ND	*	ND	*	ND	*	ND	*	
Nitrite (N)	ND	*	ND	*	ND	*	ND	*	
Nitrate (N)	ND	*	ND	*	ND	*	2.2	0.16	
Fluoride	ND	*	ND	*	ND	*	1.3	0.07	
Bromide	2.5	0.03	ND	*	0.13	0.00	1.0	0.01	
<b>Total Anions</b>		82.48		74.52		24.56		50.50	
Elect. Cond. (µMhos/cm)	6300		5400		1800		3800		
<b>CATION/ANION RATIO</b>		1.04		0.98		0.95		0.93	
% Difference		2		1		3		4	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>									
TDS (measured)	5080		4470		1590		3090		
TDS (calculated)	4929		4390		1507		2928		
Ratio meas TDS:calc TDS		1.0		1.0		1.1		1.1	
Ratio Meas. TDS:EC		0.81		0.83		0.88		0.81	
Ratio Calc. TDS:EC		0.78		0.81		0.84		0.77	
Ratio of anion sum:EC		1.3		1.4		1.4		1.3	
Ratio of cation sum:EC		1.4		1.4		1.3		1.2	

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1203709

12-Apr-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Battery Pit

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 200.7: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1775</b>	RunNo: <b>1775</b>								
Prep Date:	Analysis Date: <b>3/29/2012</b>	SeqNo: <b>49826</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 200.7: Dissolved Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R1775</b>	RunNo: <b>1775</b>								
Prep Date:	Analysis Date: <b>3/29/2012</b>	SeqNo: <b>49827</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	50	1.0	50.00	0	99.9	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Copper	0.52	0.0060	0.5000	0	104	85	115			
Lead	0.51	0.0050	0.5000	0	102	85	115			
Magnesium	51	1.0	50.00	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	101	85	115			
Potassium	51	1.0	50.00	0	101	85	115			
Silver	0.11	0.0050	0.1000	0	106	85	115			
Sodium	50	1.0	50.00	0	99.5	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 200.7: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1831</b>	RunNo: <b>1831</b>								
Prep Date:	Analysis Date: <b>4/1/2012</b>	SeqNo: <b>51185</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Iron	ND	0.020								
Zinc	ND	0.010								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 200.7: Dissolved Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R1831</b>	RunNo: <b>1831</b>								
Prep Date:	Analysis Date: <b>4/1/2012</b>	SeqNo: <b>51186</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

\*X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709

12-Apr-12

Client: Safety & Environmental Solutions

Project: Yates Lattion Battery Pit

Sample ID: LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: R1831		RunNo: 1831						
Prep Date:		Analysis Date: 4/1/2012		SeqNo: 51186		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.3	85	115			
Zinc	0.46	0.010	0.5000	0	93.0	85	115			

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1203709

12-Apr-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Battery Pit

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1716</b>	RunNo: <b>1716</b>								
Prep Date:	Analysis Date: <b>3/26/2012</b>	SeqNo: <b>48343</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R1716</b>	RunNo: <b>1716</b>								
Prep Date:	Analysis Date: <b>3/26/2012</b>	SeqNo: <b>48345</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	107	85	115			
Selenium	0.029	0.0010	0.02500	0	115	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1716</b>	RunNo: <b>1716</b>								
Prep Date:	Analysis Date: <b>3/26/2012</b>	SeqNo: <b>48377</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R1716</b>	RunNo: <b>1716</b>								
Prep Date:	Analysis Date: <b>3/26/2012</b>	SeqNo: <b>48378</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R2005</b>	RunNo: <b>2005</b>								
Prep Date:	Analysis Date: <b>4/9/2012</b>	SeqNo: <b>55881</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R2005</b>	RunNo: <b>2005</b>								
Prep Date:	Analysis Date: <b>4/9/2012</b>	SeqNo: <b>55882</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

**Qualifiers:**

\*X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709

12-Apr-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Battery Pit

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R2005</b>			RunNo: <b>2005</b>						
Prep Date:	Analysis Date: <b>4/9/2012</b>			SeqNo: <b>55883</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R2005</b>			RunNo: <b>2005</b>						
Prep Date:	Analysis Date: <b>4/9/2012</b>			SeqNo: <b>55884</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R2039</b>			RunNo: <b>2039</b>						
Prep Date:	Analysis Date: <b>4/10/2012</b>			SeqNo: <b>56837</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R2039</b>			RunNo: <b>2039</b>						
Prep Date:	Analysis Date: <b>4/10/2012</b>			SeqNo: <b>56840</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R2039</b>			RunNo: <b>2039</b>						
Prep Date:	Analysis Date: <b>4/10/2012</b>			SeqNo: <b>56842</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.024	0.0010	0.02500	0	97.7	85	115			

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R2039</b>			RunNo: <b>2039</b>						
Prep Date:	Analysis Date: <b>4/10/2012</b>			SeqNo: <b>56843</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.024	0.0010	0.02500	0	97.2	85	115			

**Qualifiers:**

\*X Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
RL Reporting Detection Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709  
12-Apr-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Battery Pit

Sample ID: <b>MB-1198</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 245.1: Mercury</b>						
Client ID: <b>PBW</b>		Batch ID: <b>1198</b>		RunNo: <b>1614</b>						
Prep Date: <b>3/22/2012</b>		Analysis Date: <b>3/22/2012</b>		SeqNo: <b>45503</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: <b>LCS-1198</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 245.1: Mercury</b>						
Client ID: <b>LCSW</b>		Batch ID: <b>1198</b>		RunNo: <b>1614</b>						
Prep Date: <b>3/22/2012</b>		Analysis Date: <b>3/22/2012</b>		SeqNo: <b>45504</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	80	120			

Qualifiers:

\*/X

Value exceeds Maximum Contaminant Level.

E

Value above quantitation range

J

Analyte detected below quantitation limits

R

RPD outside accepted recovery limits

B

Analyte detected in the associated Method Blank

H

Holding times for preparation or analysis exceeded

ND

Not Detected at the Reporting Limit

RL

Reporting Detection Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1203709

12-Apr-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Battery Pit

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1597</b>	RunNo: <b>1597</b>								
Prep Date:	Analysis Date: <b>3/21/2012</b>	SeqNo: <b>44823</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R1597</b>	RunNo: <b>1597</b>								
Prep Date:	Analysis Date: <b>3/21/2012</b>	SeqNo: <b>44824</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.1	90	110			
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Bromide	2.4	0.10	2.500	0	94.6	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.4	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1625</b>	RunNo: <b>1625</b>								
Prep Date:	Analysis Date: <b>3/22/2012</b>	SeqNo: <b>45944</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R1625</b>	RunNo: <b>1625</b>								
Prep Date:	Analysis Date: <b>3/22/2012</b>	SeqNo: <b>45945</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.6	90	110			
Sulfate	9.9	0.50	10.00	0	99.3	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	98.7	90	110			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R1735</b>	RunNo: <b>1735</b>								
Prep Date:	Analysis Date: <b>3/27/2012</b>	SeqNo: <b>48783</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

**Qualifiers:**

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709  
12-Apr-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Battery Pit

Sample ID: LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions						
Client ID: LCSW		Batch ID: R1735		RunNo: 1735						
Prep Date:		Analysis Date: 3/27/2012		SeqNo: 48784		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.6	90	110			

Sample ID: MB		SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID: PBW		Batch ID: R1735		RunNo: 1735						
Prep Date:		Analysis Date: 3/27/2012		SeqNo: 48837		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID: LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions						
Client ID: LCSW		Batch ID: R1735		RunNo: 1735						
Prep Date:		Analysis Date: 3/27/2012		SeqNo: 48838		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709  
12-Apr-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Battery Pit

Sample ID: 5ml rb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: R1604	RunNo: 1604								
Prep Date:	Analysis Date: 3/21/2012	SeqNo: 45245			Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.2	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.4	70	130			
Surr: Dibromofluoromethane	8.3		10.00		82.5	69.8	130			
Surr: Toluene-d8	9.2		10.00		91.8	70	130			

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: R1604	RunNo: 1604								
Prep Date:	Analysis Date: 3/21/2012	SeqNo: 45246			Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	84.1	126			
Toluene	20	1.0	20.00	0	98.9	80	120			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.9	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.6	70	130			
Surr: Dibromofluoromethane	7.8		10.00		78.5	69.8	130			
Surr: Toluene-d8	9.0		10.00		90.3	70	130			

Qualifiers:  
\*/X Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
RL Reporting Detection Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709  
12-Apr-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Battery Pit

Sample ID: mb-1	SampType: MBLK	TestCode: SM2320B: Alkalinity
Client ID: PBW	Batch ID: R1600	RunNo: 1600
Prep Date:	Analysis Date: 3/21/2012	SeqNo: 45065 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	ND	20

Sample ID: lcs-1	SampType: LCS	TestCode: SM2320B: Alkalinity
Client ID: LCSW	Batch ID: R1600	RunNo: 1600
Prep Date:	Analysis Date: 3/21/2012	SeqNo: 45066 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	79	20 80.00 0 98.9 88.1 104

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1203709  
12-Apr-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Battery Pit

Sample ID: MB-1196	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 1196	RunNo: 1641								
Prep Date: 3/22/2012	Analysis Date: 3/23/2012	SeqNo: 46518		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-1196	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 1196	RunNo: 1641								
Prep Date: 3/22/2012	Analysis Date: 3/23/2012	SeqNo: 46519		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1,010	20.0	1,000	0	101	80	120			

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name:	Safety Env Solutions	Work Order Number:	1203709
Received by/date:	LMM 03/20/12		
Logged By:	Anne Thorne	3/20/2012 12:45:00 PM	Anne Thorne
Completed By:	Anne Thorne	3/20/2012	Anne Thorne
Reviewed By:	[Signature] 03/20/12		

**Chain of Custody**

- Were seals intact? Yes ☐ No ☐ Not Present ☒
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? *Greghand* ☒ UPS *1203kd12*

**Log In**

- Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
- Was preservative added to bottles? Yes ☒ No ☒ *mg 3/20* NA ☐
- VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

*12*

( $<2$  or  $>12$  unless noted)

Adjusted: *Added 1mL HNO<sub>3</sub> to -0015*  
for acceptable pH. *mg 3/20*

Checked by: *MG*

**Special Handling (if applicable)**

- Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

- Additional remarks:

**19. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

Chain-of-Custody Record				Turn-Around Time:	
Client: <u>Sage &amp; Solutions</u>		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush		Project Name: <u>Waters</u>	
Mailing Address: <u>703 E. Clinton</u>				Project #: <u>WAT-04-002</u>	
Phone #: <u>575-397-0570</u>				Project Manager: <u>Boyer, Dave</u>	
email or Fax#:				Sampler: <u>Sage</u>	
QA/QC Package:				On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)				Sample Temperature: <u>12</u>	
Accreditation				HEAL No. <u>1203709</u>	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____					
<input type="checkbox"/> EDD (Type) _____					
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
03/17/12	0915	140	WW-1	7	140, 142, 143, 144
03/17/12	0945	140	WW-4	7	-001
03/17/12	1005	140	WW-3	7	-002
03/17/12	1030	140	WW-2	7	-003
					-004
Date:	Time:	Relinquished by:	Received by:	Date:	Time
03/16/12	1600	Sage	Sage	03/16/12	1245
Date:	Time:	Relinquished by:	Received by:	Date:	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 03, 2012

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 390-7067  
FAX: (575) 393-4388

RE: Lattion Pit

OrderNo.: 1206989

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/22/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1206989

Date Reported: 8/3/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 6/18/2012 8:20:00 AM

Lab ID: 1206989-001

Matrix: AQUEOUS

Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	1.3	0.50		mg/L	5	6/29/2012 3:28:02 PM
Chloride	1800	50		mg/L	100	6/29/2012 3:40:27 PM
Bromide	3.1	0.10		mg/L	1	6/22/2012 8:42:21 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	6/23/2012 3:26:40 AM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	6/22/2012 8:42:21 PM
Sulfate	2000	50		mg/L	100	6/29/2012 3:40:27 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.018	0.0020		mg/L	1	7/19/2012 11:46:55 AM
Cadmium	ND	0.0020		mg/L	1	7/19/2012 11:46:55 AM
Calcium	940	10		mg/L	10	7/26/2012 11:48:33 AM
Chromium	ND	0.0060		mg/L	1	7/19/2012 11:46:55 AM
Copper	ND	0.0060		mg/L	1	7/19/2012 11:46:55 AM
Iron	ND	0.020		mg/L	1	7/12/2012 9:28:57 PM
Lead	ND	0.0050		mg/L	1	7/19/2012 11:46:55 AM
Magnesium	350	5.0		mg/L	5	7/12/2012 9:32:48 PM
Manganese	0.028	0.0020		mg/L	1	7/19/2012 11:46:55 AM
Potassium	4.3	1.0		mg/L	1	7/19/2012 11:46:55 AM
Silver	ND	0.0050		mg/L	1	7/12/2012 9:28:57 PM
Sodium	370	5.0		mg/L	5	7/12/2012 9:32:48 PM
Zinc	0.012	0.010		mg/L	1	7/19/2012 11:46:55 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0021	0.0020		mg/L	2	7/25/2012 3:39:02 PM
Selenium	0.0086	0.0020		mg/L	2	7/25/2012 3:39:02 PM
Uranium	0.0027	0.0020		mg/L	2	7/25/2012 3:39:02 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>RAG</b>
Mercury	ND	0.00020		mg/L	1	6/28/2012 2:32:26 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>JDJ</b>
Benzene	ND	1.0		µg/L	1	6/25/2012 4:41:35 PM
Toluene	ND	1.0		µg/L	1	6/25/2012 4:41:35 PM
Ethylbenzene	ND	1.0		µg/L	1	6/25/2012 4:41:35 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/25/2012 4:41:35 PM
Naphthalene	ND	2.0		µg/L	1	6/25/2012 4:41:35 PM
Xylenes, Total	ND	2.0		µg/L	1	6/25/2012 4:41:35 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	6/25/2012 4:41:35 PM
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	6/25/2012 4:41:35 PM
Surr: Dibromofluoromethane	99.4	69.8-130		%REC	1	6/25/2012 4:41:35 PM
Surr: Toluene-d8	94.5	70-130		%REC	1	6/25/2012 4:41:35 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: <b>DBD</b>
Conductivity	6700	0.010		µmhos/cm	1	6/25/2012 4:31:12 PM

**Qualifiers:** \*/X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit  
 U Samples with CalcVal < MDL

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 1206989  
Date Reported: 8/3/2012

CLIENT: Safety & Environmental Solutions      Client Sample ID: MW-1  
Project: Lattion Pit      Collection Date: 6/18/2012 8:20:00 AM  
Lab ID: 1206989-001      Matrix: AQUEOUS      Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: DBD
pH	7.19	1.68	H	pH units	1	6/25/2012 4:31:12 PM
SM2320B: ALKALINITY						
						Analyst: DBD
Bicarbonate (As CaCO3)	200	20		mg/L CaCO3	1	6/25/2012 4:31:12 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/25/2012 4:31:12 PM
Total Alkalinity (as CaCO3)	200	20		mg/L CaCO3	1	6/25/2012 4:31:12 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: SNV
Total Dissolved Solids	5940	20.0		mg/L	1	6/26/2012 3:11:00 PM

Qualifiers:	* / X	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 19
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits	U	Samples with CalcVal < MDL	



## Analytical Report

Lab Order 1206989

Date Reported: 8/3/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 6/18/2012 8:50:00 AM

Lab ID: 1206989-002

Matrix: AQUEOUS

Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	1.7	1.0		mg/L	10	7/9/2012 1:32:50 PM
Chloride	1200	50		mg/L	100	6/29/2012 4:05:16 PM
Bromide	2.3	0.10		mg/L	1	6/22/2012 9:27:17 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	6/23/2012 3:15:26 AM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	6/22/2012 9:27:17 PM
Sulfate	1800	50		mg/L	100	6/29/2012 4:05:16 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.016	0.0020		mg/L	1	7/19/2012 11:54:29 AM
Cadmium	ND	0.0020		mg/L	1	7/19/2012 11:54:29 AM
Calcium	780	10		mg/L	10	7/19/2012 11:58:24 AM
Chromium	ND	0.0060		mg/L	1	7/19/2012 11:54:29 AM
Copper	ND	0.0060		mg/L	1	7/19/2012 11:54:29 AM
Iron	0.14	0.020		mg/L	1	7/12/2012 9:36:23 PM
Lead	ND	0.0050		mg/L	1	7/19/2012 11:54:29 AM
Magnesium	300	5.0		mg/L	5	7/12/2012 9:55:50 PM
Manganese	0.073	0.010	*	mg/L	5	7/12/2012 9:55:50 PM
Potassium	3.5	1.0		mg/L	1	7/19/2012 11:54:29 AM
Silver	ND	0.0050		mg/L	1	7/12/2012 9:36:23 PM
Sodium	220	5.0		mg/L	5	7/12/2012 9:55:50 PM
Zinc	0.043	0.010		mg/L	1	7/19/2012 11:54:29 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0020	0.0010		mg/L	1	7/24/2012 6:20:45 PM
Selenium	0.0058	0.0010		mg/L	1	7/24/2012 6:20:45 PM
Uranium	0.0036	0.0010		mg/L	1	7/25/2012 3:40:54 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>RAG</b>
Mercury	ND	0.00020		mg/L	1	6/28/2012 2:34:14 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>JDJ</b>
Benzene	ND	1.0		µg/L	1	6/25/2012 5:11:31 PM
Toluene	ND	1.0		µg/L	1	6/25/2012 5:11:31 PM
Ethylbenzene	ND	1.0		µg/L	1	6/25/2012 5:11:31 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/25/2012 5:11:31 PM
Naphthalene	ND	2.0		µg/L	1	6/25/2012 5:11:31 PM
Xylenes, Total	ND	2.0		µg/L	1	6/25/2012 5:11:31 PM
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	1	6/25/2012 5:11:31 PM
Surr: 4-Bromofluorobenzene	118	70-130		%REC	1	6/25/2012 5:11:31 PM
Surr: Dibromofluoromethane	105	69.8-130		%REC	1	6/25/2012 5:11:31 PM
Surr: Toluene-d8	91.6	70-130		%REC	1	6/25/2012 5:11:31 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: <b>DBD</b>
Conductivity	5500	0.010		µmhos/cm	1	6/25/2012 4:43:35 PM

**Qualifiers:** \*/X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit  
 U Samples with CalcVal < MDL

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1206989

Date Reported: 8/3/2012

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 6/18/2012 8:50:00 AM

Lab ID: 1206989-002

Matrix: AQUEOUS

Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: DBD
pH	7.27	1.68	H	pH units	1	6/25/2012 4:43:35 PM
SM2320B: ALKALINITY						
						Analyst: DBD
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	6/25/2012 4:43:35 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/25/2012 4:43:35 PM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	6/25/2012 4:43:35 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: SNV
Total Dissolved Solids	4880	400		mg/L	1	6/26/2012 3:11:00 PM

Qualifiers:	* / X	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
U	Samples with CalcVal < MDL



## Analytical Report

Lab Order 1206989

Date Reported: 8/3/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 6/18/2012 9:15:00 AM

Lab ID: 1206989-003

Matrix: AQUEOUS

Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	1.4	0.10		mg/L	1	6/29/2012 4:17:41 PM
Chloride	45	10		mg/L	20	6/22/2012 10:23:25 PM
Bromide	0.20	0.10		mg/L	1	6/22/2012 10:12:11 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	6/23/2012 2:52:58 AM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	6/22/2012 10:12:11 PM
Sulfate	900	25		mg/L	50	6/29/2012 4:30:05 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.017	0.0020		mg/L	1	7/19/2012 12:01:58 PM
Cadmium	ND	0.0020		mg/L	1	7/19/2012 12:01:58 PM
Calcium	270	5.0		mg/L	5	7/19/2012 12:19:10 PM
Chromium	ND	0.0060		mg/L	1	7/19/2012 12:01:58 PM
Copper	ND	0.0060		mg/L	1	7/19/2012 12:01:58 PM
Iron	ND	0.020		mg/L	1	7/12/2012 9:59:24 PM
Lead	ND	0.0050		mg/L	1	7/19/2012 12:01:58 PM
Magnesium	99	1.0		mg/L	1	7/12/2012 9:59:24 PM
Manganese	0.0029	0.0020		mg/L	1	7/12/2012 9:59:24 PM
Potassium	2.8	1.0		mg/L	1	7/19/2012 12:01:58 PM
Silver	ND	0.0050		mg/L	1	7/12/2012 9:59:24 PM
Sodium	36	1.0		mg/L	1	7/12/2012 9:59:24 PM
Zinc	0.026	0.010		mg/L	1	7/19/2012 12:01:58 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	ND	0.0010		mg/L	1	7/24/2012 6:22:37 PM
Selenium	ND	0.0010		mg/L	1	7/24/2012 6:22:37 PM
Uranium	ND	0.0010		mg/L	1	7/25/2012 3:42:46 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>RAG</b>
Mercury	ND	0.00020		mg/L	1	6/28/2012 2:36:01 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>JDJ</b>
Benzene	ND	1.0		µg/L	1	6/25/2012 5:41:24 PM
Toluene	ND	1.0		µg/L	1	6/25/2012 5:41:24 PM
Ethylbenzene	ND	1.0		µg/L	1	6/25/2012 5:41:24 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/25/2012 5:41:24 PM
Naphthalene	ND	2.0		µg/L	1	6/25/2012 5:41:24 PM
Xylenes, Total	ND	2.0		µg/L	1	6/25/2012 5:41:24 PM
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%REC	1	6/25/2012 5:41:24 PM
Surr: 4-Bromofluorobenzene	115	70-130		%REC	1	6/25/2012 5:41:24 PM
Surr: Dibromofluoromethane	104	69.8-130		%REC	1	6/25/2012 5:41:24 PM
Surr: Toluene-d8	97.0	70-130		%REC	1	6/25/2012 5:41:24 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: <b>DBD</b>
Conductivity	1900	0.010		µmhos/cm	1	6/25/2012 4:54:51 PM

**Qualifiers:** \*/X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit  
 U Samples with CalcVal < MDL



Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 1206989  
Date Reported: 8/3/2012

CLIENT: Safety & Environmental Solutions      Client Sample ID: MW-3  
Project: Lattion Pit      Collection Date: 6/18/2012 9:15:00 AM  
Lab ID: 1206989-003      Matrix: AQUEOUS      Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: DBD
pH	7.55	1.68	H	pH units	1	6/25/2012 4:54:51 PM
SM2320B: ALKALINITY						
						Analyst: DBD
Bicarbonate (As CaCO3)	180	20		mg/L CaCO3	1	6/25/2012 4:54:51 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/25/2012 4:54:51 PM
Total Alkalinity (as CaCO3)	180	20		mg/L CaCO3	1	6/25/2012 4:54:51 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: SNV
Total Dissolved Solids	1590	20.0		mg/L	1	6/26/2012 3:11:00 PM

Qualifiers:	* / X	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 19
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits	U	Samples with CalcVal < MDL	



## Analytical Report

Lab Order 1206989

Date Reported: 8/3/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 6/18/2012 9:35:00 AM

Lab ID: 1206989-004

Matrix: AQUEOUS

Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>BRM</b>
Fluoride	1.2	0.10		mg/L	1	6/29/2012 4:42:29 PM
Chloride	790	25		mg/L	50	6/29/2012 4:54:53 PM
Bromide	1.6	0.10		mg/L	1	6/22/2012 10:34:39 PM
Nitrate+Nitrite as N	1.5	1.0		mg/L	5	6/23/2012 3:04:12 AM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	6/22/2012 10:34:39 PM
Sulfate	1200	25		mg/L	50	6/29/2012 4:54:53 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Barium	0.014	0.0020		mg/L	1	7/19/2012 12:22:43 PM
Cadmium	ND	0.0020		mg/L	1	7/19/2012 12:22:43 PM
Calcium	550	10		mg/L	10	7/19/2012 12:26:31 PM
Chromium	ND	0.0060		mg/L	1	7/19/2012 12:22:43 PM
Copper	ND	0.0060		mg/L	1	7/19/2012 12:22:43 PM
Iron	0.061	0.020		mg/L	1	7/12/2012 10:06:46 PM
Lead	ND	0.0050		mg/L	1	7/19/2012 12:22:43 PM
Magnesium	180	5.0		mg/L	5	7/12/2012 10:10:35 PM
Manganese	0.0032	0.0020		mg/L	1	7/12/2012 10:06:46 PM
Potassium	4.6	1.0		mg/L	1	7/19/2012 12:22:43 PM
Silver	ND	0.0050		mg/L	1	7/12/2012 10:06:46 PM
Sodium	89	1.0		mg/L	1	7/12/2012 10:06:46 PM
Zinc	0.010	0.010		mg/L	1	7/19/2012 12:22:43 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>SNV</b>
Arsenic	0.0022	0.0010		mg/L	1	7/24/2012 6:24:30 PM
Selenium	0.024	0.0010		mg/L	1	7/24/2012 6:24:30 PM
Uranium	0.0069	0.0010		mg/L	1	7/25/2012 3:44:38 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: <b>RAG</b>
Mercury	ND	0.00020		mg/L	1	6/28/2012 2:37:47 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>JDJ</b>
Benzene	ND	1.0		µg/L	1	6/25/2012 6:11:10 PM
Toluene	ND	1.0		µg/L	1	6/25/2012 6:11:10 PM
Ethylbenzene	ND	1.0		µg/L	1	6/25/2012 6:11:10 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/25/2012 6:11:10 PM
Naphthalene	ND	2.0		µg/L	1	6/25/2012 6:11:10 PM
Xylenes, Total	ND	2.0		µg/L	1	6/25/2012 6:11:10 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	6/25/2012 6:11:10 PM
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	6/25/2012 6:11:10 PM
Surr: Dibromofluoromethane	107	69.8-130		%REC	1	6/25/2012 6:11:10 PM
Surr: Toluene-d8	95.5	70-130		%REC	1	6/25/2012 6:11:10 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: <b>DBD</b>
Conductivity	3900	0.010		µmhos/cm	1	6/25/2012 5:05:40 PM

**Qualifiers:** \* / X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit  
 U Samples with CalcVal < MDL

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1206989

Date Reported: 8/3/2012

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 6/18/2012 9:35:00 AM

Lab ID: 1206989-004

Matrix: AQUEOUS

Received Date: 6/22/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: DBD
pH	7.34	1.68	H	pH units	1	6/25/2012 5:05:40 PM
SM2320B: ALKALINITY						
						Analyst: DBD
Bicarbonate (As CaCO3)	150	20		mg/L CaCO3	1	6/25/2012 5:05:40 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/25/2012 5:05:40 PM
Total Alkalinity (as CaCO3)	150	20		mg/L CaCO3	1	6/25/2012 5:05:40 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: SNV
Total Dissolved Solids	3260	20.0		mg/L	1	6/26/2012 3:11:00 PM

Qualifiers:	* / X	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
U	Samples with CalcVal < MDL



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MWV-1 1206989-01		MWV-4 1206989-02		MWV-3 1206989-03		MWV-2 1206989-04		
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sodium	370	16.09	220	9.57	36	1.57	89	3.87	
Potassium	4.3	0.11	3.5	0.09	2.8	0.07	4.6	0.12	
Calcium	940	46.91	780	38.92	270	13.47	550	27.45	
Magnesium	350	28.81	300	24.69	99	8.15	180	14.81	
<b>Total Cations</b>		91.92		73.27		23.26		46.25	
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sulfate	2000	41.64	1800	37.48	900	18.74	1200	24.98	
Chloride	1800	50.78	1200	33.85	45	1.27	790	22.28	
Bicarbonate (CaCO <sub>3</sub> )	200	4.00	160	3.20	180	3.60	150	3.00	
Carbonate (CaCO <sub>3</sub> )	ND	*	ND	*	ND	*	ND	*	
Phosphate (P)	ND	*	ND	*	ND	*	ND	*	
Nitrite (N)	ND	*	ND	*	ND	*	ND	*	
Nitrate (N)	ND	*	ND	*	ND	*	ND	*	
Fluoride	1.3	0.07	1.7	0.09	1.4	0.07	1.5	0.11	
Bromide	3.1	0.04	2.3	0.03	0.2	0.00	1.6	0.02	
<b>Total Anions</b>		96.52		74.64		23.68		50.46	
Elect. Cond. (µMhos/cm)	6700		5500		1900		3900		
<b>CATION/ANION RATIO</b>		0.95		0.98		0.98		0.92	
% Difference		2		1		1		4	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>									
TDS (measured)	5940		4880		1590		3260		
TDS (calculated)	5589		4404		1462		2913		
Ratio meas TDS:calc TDS		1.1		1.1		1.1		1.1	
Ratio Meas. TDS:EC		0.89		0.89		0.84		0.84	
Ratio Calc. TDS:EC		0.83		0.80		0.77		0.75	
Ratio of anion sum:EC		1.4		1.4		1.2		1.3	
Ratio of cation sum:EC		1.4		1.3		1.2		1.2	

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989  
03-Aug-12

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: R4006	RunNo: 4006								
Prep Date:	Analysis Date: 7/12/2012	SeqNo: 114717 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: R4006	RunNo: 4006								
Prep Date:	Analysis Date: 7/12/2012	SeqNo: 114718 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0.002760	95.9	85	115			
Magnesium	51	1.0	50.00	0	101	85	115			
Manganese	0.47	0.0020	0.5000	0	94.1	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Sodium	50	1.0	50.00	0.06084	99.2	85	115			

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: R4134	RunNo: 4134								
Prep Date:	Analysis Date: 7/19/2012	SeqNo: 118304 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Lead	ND	0.0050								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: R4134	RunNo: 4134								
Prep Date:	Analysis Date: 7/19/2012	SeqNo: 118305 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.45	0.0020	0.5000	0	90.6	85	115			
Cadmium	0.45	0.0020	0.5000	0	89.7	85	115			
Calcium	57	1.0	50.00	0	113	85	115			
Chromium	0.45	0.0060	0.5000	0.001200	89.3	85	115			
Copper	0.45	0.0060	0.5000	0	90.3	85	115			

Qualifiers:

*X	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1206989

03-Aug-12

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R4134</b>		RunNo: <b>4134</b>							
Prep Date:	Analysis Date: <b>7/19/2012</b>		SeqNo: <b>118305</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.46	0.0050	0.5000	0	91.5	85	115			
Manganese	0.44	0.0020	0.5000	0	87.7	85	115			
Potassium	55	1.0	50.00	0	110	85	115			
Zinc	0.45	0.010	0.5000	0	89.5	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R4134</b>		RunNo: <b>4134</b>							
Prep Date:	Analysis Date: <b>7/19/2012</b>		SeqNo: <b>118737</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Lead	ND	0.0050								
Manganese	ND	0.0020								
Zinc	ND	0.010								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R4134</b>		RunNo: <b>4134</b>							
Prep Date:	Analysis Date: <b>7/19/2012</b>		SeqNo: <b>118738</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.9	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.8	85	115			
Calcium	43	1.0	50.00	0	85.8	85	115			
Chromium	0.49	0.0060	0.5000	0	98.3	85	115			
Copper	0.48	0.0060	0.5000	0	96.7	85	115			
Lead	0.50	0.0050	0.5000	0	99.2	85	115			
Manganese	0.48	0.0020	0.5000	0	95.4	85	115			
Zinc	0.49	0.010	0.5000	0	97.4	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R4442</b>		RunNo: <b>4442</b>							
Prep Date:	Analysis Date: <b>7/26/2012</b>		SeqNo: <b>124089</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

**Qualifiers:**

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989

03-Aug-12

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: R4442		RunNo: 4442						
Prep Date:		Analysis Date: 7/26/2012		SeqNo: 124090		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	52	1.0	50.00	0	103	85	115			

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1206989

03-Aug-12

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R4408</b>		RunNo: <b>4408</b>							
Prep Date:	Analysis Date: <b>7/24/2012</b>		SeqNo: <b>122986</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R4408</b>		RunNo: <b>4408</b>							
Prep Date:	Analysis Date: <b>7/24/2012</b>		SeqNo: <b>122987</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R4408</b>		RunNo: <b>4408</b>							
Prep Date:	Analysis Date: <b>7/24/2012</b>		SeqNo: <b>122988</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R4408</b>		RunNo: <b>4408</b>							
Prep Date:	Analysis Date: <b>7/24/2012</b>		SeqNo: <b>122989</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R4441</b>		RunNo: <b>4441</b>							
Prep Date:	Analysis Date: <b>7/25/2012</b>		SeqNo: <b>124069</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.8	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			
Uranium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R4441</b>		RunNo: <b>4441</b>							
Prep Date:	Analysis Date: <b>7/25/2012</b>		SeqNo: <b>124070</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.3	85	115			

**Qualifiers:**

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E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1206989

03-Aug-12

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R4441</b>			RunNo: <b>4441</b>						
Prep Date:	Analysis Date: <b>7/25/2012</b>			SeqNo: <b>124070</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.024	0.0010	0.02500	0	97.1	85	115			

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R4441</b>			RunNo: <b>4441</b>						
Prep Date:	Analysis Date: <b>7/25/2012</b>			SeqNo: <b>124071</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.0	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.024	0.0010	0.02500	0	97.3	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R4441</b>			RunNo: <b>4441</b>						
Prep Date:	Analysis Date: <b>7/25/2012</b>			SeqNo: <b>124072</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R4441</b>			RunNo: <b>4441</b>						
Prep Date:	Analysis Date: <b>7/25/2012</b>			SeqNo: <b>124073</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R4441</b>			RunNo: <b>4441</b>						
Prep Date:	Analysis Date: <b>7/25/2012</b>			SeqNo: <b>124074</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

**Qualifiers:**

\* /X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989

03-Aug-12

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB-2618	SampType: MBLK	TestCode: EPA Method 245.1: Mercury
Client ID: PBW	Batch ID: 2618	RunNo: 3748
Prep Date: 6/28/2012	Analysis Date: 6/28/2012	SeqNo: 106037 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Mercury	ND 0.00020	

Sample ID: LCS-2618	SampType: LCS	TestCode: EPA Method 245.1: Mercury
Client ID: LCSW	Batch ID: 2618	RunNo: 3748
Prep Date: 6/28/2012	Analysis Date: 6/28/2012	SeqNo: 106038 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Mercury	0.0051 0.00020 0.005000 0 102 80 120	

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1206989

03-Aug-12

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R3648</b>	RunNo: <b>3648</b>								
Prep Date:	Analysis Date: <b>6/22/2012</b>	SeqNo: <b>102813</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R3648</b>	RunNo: <b>3648</b>								
Prep Date:	Analysis Date: <b>6/22/2012</b>	SeqNo: <b>102814</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	99.4	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	102	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	0	102	90	110			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R3812</b>	RunNo: <b>3812</b>								
Prep Date:	Analysis Date: <b>6/29/2012</b>	SeqNo: <b>107840</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R3812</b>	RunNo: <b>3812</b>								
Prep Date:	Analysis Date: <b>6/29/2012</b>	SeqNo: <b>107841</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	93.6	90	110			
Chloride	4.6	0.50	5.000	0	91.7	90	110			
Sulfate	9.6	0.50	10.00	0	95.6	90	110			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R3935</b>	RunNo: <b>3935</b>								
Prep Date:	Analysis Date: <b>7/9/2012</b>	SeqNo: <b>112162</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

**Qualifiers:**

\*/X Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 RL Reporting Detection Limit



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989  
03-Aug-12

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R3935	RunNo: 3935								
Prep Date:	Analysis Date: 7/9/2012	SeqNo: 112163	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	90	110			

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R3935	RunNo: 3935								
Prep Date:	Analysis Date: 7/9/2012	SeqNo: 112214	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R3935	RunNo: 3935								
Prep Date:	Analysis Date: 7/9/2012	SeqNo: 112215	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	90	110			

- Qualifiers:
- \*/X

Value exceeds Maximum Contaminant Level.

E

Value above quantitation range

J

Analyte detected below quantitation limits

R

RPD outside accepted recovery limits

B

Analyte detected in the associated Method Blank

H

Holding times for preparation or analysis exceeded

ND

Not Detected at the Reporting Limit

RL

Reporting Detection Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989

03-Aug-12

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: 5ml rb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: R3667	RunNo: 3667								
Prep Date:	Analysis Date: 6/25/2012	SeqNo: 103462	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		106	69.8	130			
Surr: Toluene-d8	9.0		10.00		90.0	70	130			

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: R3667	RunNo: 3667								
Prep Date:	Analysis Date: 6/25/2012	SeqNo: 103463	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	84.1	126			
Toluene	20	1.0	20.00	0	98.7	80	120			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		115	70	130			
Surr: Dibromofluoromethane	11		10.00		108	69.8	130			
Surr: Toluene-d8	9.7		10.00		97.1	70	130			

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989  
03-Aug-12

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: mb-1	SampType: MBLK	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R3668	RunNo: 3668								
Prep Date:	Analysis Date: 6/25/2012	SeqNo: 103336	Units: mg/L CaCO3							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID: lcs-1	SampType: LCS	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R3668	RunNo: 3668								
Prep Date:	Analysis Date: 6/25/2012	SeqNo: 103337	Units: mg/L CaCO3							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	88.1	104			

Sample ID: mb-2	SampType: MBLK	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R3668	RunNo: 3668								
Prep Date:	Analysis Date: 6/25/2012	SeqNo: 103356	Units: mg/L CaCO3							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID: lcs-2	SampType: LCS	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R3668	RunNo: 3668								
Prep Date:	Analysis Date: 6/25/2012	SeqNo: 103357	Units: mg/L CaCO3							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	88.1	104			

Qualifiers:

- \*/X

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- R

RPD outside accepted recovery limits
- RL

Reporting Detection Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1206989

03-Aug-12

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB-2554	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 2554	RunNo: 3689								
Prep Date: 6/25/2012	Analysis Date: 6/26/2012	SeqNo: 104183		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-2554	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 2554	RunNo: 3689								
Prep Date: 6/25/2012	Analysis Date: 6/26/2012	SeqNo: 104184		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	999	20.0	1000	0	99.9	80	120			

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Page 19 of 19





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Safety Env Solutions

Work Order Number: 1206989

Received by/date: *LM 06/22/12*

Logged By: Anne Thorne 6/22/2012 10:45:00 AM

Completed By: Anne Thorne 6/22/2012

Reviewed By:

Chain of Custody

1. Were seals intact?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☐ No ☐ Not Present ☒Yes ☒ No ☐ Not Present ☐

GREYHOUND

Log In

4. Coolers are present? (see 19. for cooler specific information)

Yes ☒ No ☐ NA ☐

5. Was an attempt made to cool the samples?

Yes ☒ No ☐ NA ☐

6. Were all samples received at a temperature of
- $>0^{\circ}\text{C}$
- to
- $6.0^{\circ}\text{C}$

Yes ☒ No ☐ NA ☐

7. Sample(s) in proper container(s)?

Yes ☒ No ☐

8. Sufficient sample volume for indicated test(s)?

Yes ☒ No ☐

9. Are samples (except VOA and ONG) properly preserved?

Yes ☒ No ☐

10. Was preservative added to bottles?

Yes ☐ No ☒ NA ☐*incl Hubs to OORTD*

11. VOA vials have zero headspace?

Yes ☒ No ☐ No VOA Vials ☐

12. Were any sample containers received broken?

Yes ☐ No ☒

13. Does paperwork match bottle labels?
- 
- (Note discrepancies on chain of custody)

Yes ☒ No ☐

14. Are matrices correctly identified on Chain of Custody?

Yes ☒ No ☐

15. Is it clear what analyses were requested?

Yes ☒ No ☐

16. Were all holding times able to be met?

Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:*12*  
( $<2$  or  $>12$  unless noted)

Adjusted?

Checked by: *[Signature]*Special Handling (if applicable)

17. Was client notified of all discrepancies with this order?

Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

18. Additional remarks:

## 19. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Yes			









Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 23, 2012

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 390-7067  
FAX (575) 393-4388

RE: Yates Lattion Pit

OrderNo.: 1209594

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/14/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Yates Lattion Pit

Collection Date: 9/12/2012 9:20:00 AM

Lab ID: 1209594-001

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.1	0.10		mg/L	1	9/15/2012 6:19:43 AM
Chloride	1600	50		mg/L	100	9/17/2012 5:44:45 PM
Bromide	1.6	0.10		mg/L	1	9/15/2012 6:19:43 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/17/2012 11:43:30 AM
Phosphorus, Orthophosphate (As P)	ND	25	H	mg/L	50	9/17/2012 5:57:10 PM
Sulfate	2000	25		mg/L	50	9/17/2012 5:57:10 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.020	0.0020		mg/L	1	9/17/2012 7:29:54 PM
Cadmium	ND	0.0020		mg/L	1	9/17/2012 7:29:54 PM
Calcium	830	10		mg/L	10	9/17/2012 7:33:34 PM
Chromium	ND	0.0060		mg/L	1	9/17/2012 7:29:54 PM
Iron	0.68	0.020	*	mg/L	1	9/17/2012 7:29:54 PM
Magnesium	320	10		mg/L	10	9/17/2012 7:33:34 PM
Manganese	0.25	0.0020	*	mg/L	1	9/17/2012 7:29:54 PM
Potassium	4.2	1.0		mg/L	1	9/17/2012 7:29:54 PM
Silver	ND	0.0050		mg/L	1	9/17/2012 7:29:54 PM
Sodium	230	10		mg/L	10	9/17/2012 7:33:34 PM
Zinc	0.017	0.010		mg/L	1	9/17/2012 7:29:54 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0023	0.0010		mg/L	1	9/27/2012 1:34:07 PM
Copper	0.0062	0.0010		mg/L	1	9/27/2012 1:34:07 PM
Lead	ND	0.0010		mg/L	1	9/27/2012 1:34:07 PM
Selenium	0.0083	0.0010		mg/L	1	10/4/2012 1:41:20 PM
Uranium	0.0057	0.0010		mg/L	1	9/27/2012 1:34:07 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: IDC
Mercury	ND	0.00020		mg/L	1	9/18/2012 1:29:57 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	2.0		µg/L	2	9/15/2012 2:16:35 AM
Toluene	ND	2.0		µg/L	2	9/15/2012 2:16:35 AM
Ethylbenzene	ND	2.0		µg/L	2	9/15/2012 2:16:35 AM
Naphthalene	ND	4.0		µg/L	2	9/15/2012 2:16:35 AM
Xylenes, Total	ND	4.0		µg/L	2	9/15/2012 2:16:35 AM
Surr: 1,2-Dichloroethane-d4	90.4	70-130		%REC	2	9/15/2012 2:16:35 AM
Surr: 4-Bromofluorobenzene	93.6	70-130		%REC	2	9/15/2012 2:16:35 AM
Surr: Dibromofluoromethane	88.7	70-130		%REC	2	9/15/2012 2:16:35 AM
Surr: Toluene-d8	96.1	70-130		%REC	2	9/15/2012 2:16:35 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: IDC
Conductivity	6600	0.010		µmhos/cm	1	9/14/2012 7:49:40 PM
<b>SM2320B: ALKALINITY</b>						Analyst: IDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 1209594  
Date Reported: 10/23/2012

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-1

Project: Yates Lattion Pit

Collection Date: 9/12/2012 9:20:00 AM

Lab ID: 1209594-001

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2320B: ALKALINITY						Analyst: IDC
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	9/14/2012 7:49:40 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/14/2012 7:49:40 PM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	9/14/2012 7:49:40 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	5270	100		mg/L	1	9/18/2012 4:26:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Yates Lattion Pit

Collection Date: 9/12/2012 9:50:00 AM

Lab ID: 1209594-002

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.3	0.10		mg/L	1	9/15/2012 6:44:33 AM
Chloride	1200	50		mg/L	100	9/17/2012 6:09:35 PM
Bromide	1.5	0.10		mg/L	1	9/15/2012 6:44:33 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/17/2012 11:55:55 AM
Phosphorus, Orthophosphate (As P)	ND	25	H	mg/L	50	9/17/2012 6:46:49 PM
Sulfate	2000	25		mg/L	50	9/17/2012 6:46:49 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.013	0.0020		mg/L	1	9/17/2012 7:37:06 PM
Cadmium	ND	0.0020		mg/L	1	9/17/2012 7:37:06 PM
Calcium	760	10		mg/L	10	9/20/2012 10:40:51 AM
Chromium	ND	0.0060		mg/L	1	9/17/2012 7:37:06 PM
Iron	0.021	0.020		mg/L	1	9/17/2012 7:37:06 PM
Magnesium	300	10		mg/L	10	9/20/2012 10:40:51 AM
Manganese	0.048	0.0020		mg/L	1	9/17/2012 7:37:06 PM
Potassium	3.2	1.0		mg/L	1	9/17/2012 7:37:06 PM
Silver	ND	0.0050		mg/L	1	9/17/2012 7:37:06 PM
Sodium	200	10		mg/L	10	9/20/2012 10:40:51 AM
Zinc	ND	0.010		mg/L	1	9/17/2012 7:37:06 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0017	0.0010		mg/L	1	9/27/2012 1:38:03 PM
Copper	ND	0.0050		mg/L	5	10/17/2012 2:50:00 PM
Lead	ND	0.0050		mg/L	5	10/17/2012 2:50:00 PM
Selenium	ND	0.0050		mg/L	5	10/17/2012 2:50:00 PM
Uranium	0.0033	0.0010		mg/L	1	9/27/2012 1:38:03 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: IDC
Mercury	ND	0.00020		mg/L	1	9/18/2012 1:31:46 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/15/2012 3:40:54 AM
Toluene	ND	1.0		µg/L	1	9/15/2012 3:40:54 AM
Ethylbenzene	ND	1.0		µg/L	1	9/15/2012 3:40:54 AM
Naphthalene	ND	2.0		µg/L	1	9/15/2012 3:40:54 AM
Xylenes, Total	ND	2.0		µg/L	1	9/15/2012 3:40:54 AM
Surr: 1,2-Dichloroethane-d4	88.5	70-130		%REC	1	9/15/2012 3:40:54 AM
Surr: 4-Bromofluorobenzene	91.2	70-130		%REC	1	9/15/2012 3:40:54 AM
Surr: Dibromofluoromethane	85.5	70-130		%REC	1	9/15/2012 3:40:54 AM
Surr: Toluene-d8	97.6	70-130		%REC	1	9/15/2012 3:40:54 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: IDC
Conductivity	5800	0.010		µmhos/cm	1	9/14/2012 8:00:58 PM
<b>SM2320B: ALKALINITY</b>						Analyst: IDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 1209594  
Date Reported: 10/23/2012

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-4

Project: Yates Lattion Pit

Collection Date: 9/12/2012 9:50:00 AM

Lab ID: 1209594-002

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2320B: ALKALINITY						Analyst: IDC
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	9/14/2012 8:00:58 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/14/2012 8:00:58 PM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	9/14/2012 8:00:58 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	4370	100		mg/L	1	9/18/2012 4:26:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Yates Lattion Pit

Collection Date: 9/12/2012 10:15:00 AM

Lab ID: 1209594-003

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.3	0.10		mg/L	1	9/15/2012 7:09:21 AM
Chloride	45	10		mg/L	20	9/17/2012 6:59:14 PM
Bromide	0.11	0.10		mg/L	1	9/15/2012 7:09:21 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/17/2012 12:08:19 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	9/17/2012 6:59:14 PM
Sulfate	990	10		mg/L	20	9/17/2012 6:59:14 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.017	0.0020		mg/L	1	9/17/2012 7:44:25 PM
Cadmium	ND	0.0020		mg/L	1	9/17/2012 7:44:25 PM
Calcium	270	10		mg/L	10	9/20/2012 10:44:24 AM
Chromium	ND	0.0060		mg/L	1	9/17/2012 7:44:25 PM
Iron	ND	0.020		mg/L	1	9/17/2012 7:44:25 PM
Magnesium	97	1.0		mg/L	1	9/17/2012 7:44:25 PM
Manganese	0.030	0.0020		mg/L	1	9/17/2012 7:44:25 PM
Potassium	2.3	1.0		mg/L	1	9/17/2012 7:44:25 PM
Silver	ND	0.0050		mg/L	1	9/17/2012 7:44:25 PM
Sodium	33	1.0		mg/L	1	9/17/2012 7:44:25 PM
Zinc	ND	0.010		mg/L	1	9/17/2012 7:44:25 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0012	0.0010		mg/L	1	9/27/2012 1:41:59 PM
Copper	0.0021	0.0010		mg/L	1	9/27/2012 1:41:59 PM
Lead	ND	0.0010		mg/L	1	9/27/2012 1:41:59 PM
Selenium	ND	0.0010		mg/L	1	10/4/2012 1:49:12 PM
Uranium	ND	0.0010		mg/L	1	9/27/2012 1:41:59 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: IDC
Mercury	ND	0.00020		mg/L	1	9/18/2012 1:33:36 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/15/2012 4:09:02 AM
Toluene	ND	1.0		µg/L	1	9/15/2012 4:09:02 AM
Ethylbenzene	ND	1.0		µg/L	1	9/15/2012 4:09:02 AM
Naphthalene	ND	2.0		µg/L	1	9/15/2012 4:09:02 AM
Xylenes, Total	ND	2.0		µg/L	1	9/15/2012 4:09:02 AM
Surr: 1,2-Dichloroethane-d4	88.3	70-130		%REC	1	9/15/2012 4:09:02 AM
Surr: 4-Bromofluorobenzene	90.6	70-130		%REC	1	9/15/2012 4:09:02 AM
Surr: Dibromofluoromethane	84.3	70-130		%REC	1	9/15/2012 4:09:02 AM
Surr: Toluene-d8	97.1	70-130		%REC	1	9/15/2012 4:09:02 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: IDC
Conductivity	1900	0.010		µmhos/cm	1	9/14/2012 8:11:59 PM
<b>SM2320B: ALKALINITY</b>						Analyst: IDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-3

Project: Yates Lattion Pit

Collection Date: 9/12/2012 10:15:00 AM

Lab ID: 1209594-003

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2320B: ALKALINITY						Analyst: IDC
Bicarbonate (As CaCO3)	180	20		mg/L CaCO3	1	9/14/2012 8:11:59 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/14/2012 8:11:59 PM
Total Alkalinity (as CaCO3)	180	20		mg/L CaCO3	1	9/14/2012 8:11:59 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	1580	40.0		mg/L	1	9/18/2012 4:26:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Yates Lattion Pit

Collection Date: 9/12/2012 10:40:00 AM

Lab ID: 1209594-004

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	0.60	0.10		mg/L	1	9/15/2012 7:34:11 AM
Chloride	940	25		mg/L	50	9/17/2012 7:11:38 PM
Bromide	1.2	0.10		mg/L	1	9/15/2012 7:34:11 AM
Nitrate+Nitrite as N	3.2	1.0		mg/L	5	9/17/2012 12:57:57 PM
Phosphorus, Orthophosphate (As P)	ND	25	H	mg/L	50	9/17/2012 7:11:38 PM
Sulfate	1300	25		mg/L	50	9/17/2012 7:11:38 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.013	0.0020		mg/L	1	9/17/2012 7:53:24 PM
Cadmium	ND	0.0020		mg/L	1	9/17/2012 7:53:24 PM
Calcium	570	10		mg/L	10	9/17/2012 7:57:15 PM
Chromium	ND	0.0060		mg/L	1	9/17/2012 7:53:24 PM
Iron	0.041	0.020		mg/L	1	9/17/2012 7:53:24 PM
Magnesium	180	10		mg/L	10	9/17/2012 7:57:15 PM
Manganese	0.0026	0.0020		mg/L	1	9/17/2012 7:53:24 PM
Potassium	4.1	1.0		mg/L	1	9/17/2012 7:53:24 PM
Silver	ND	0.0050		mg/L	1	9/17/2012 7:53:24 PM
Sodium	86	1.0		mg/L	1	9/17/2012 7:53:24 PM
Zinc	0.011	0.010		mg/L	1	9/17/2012 7:53:24 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0019	0.0010		mg/L	1	9/27/2012 1:45:55 PM
Copper	0.0021	0.0010		mg/L	1	9/27/2012 1:45:55 PM
Lead	ND	0.0010		mg/L	1	9/27/2012 1:45:55 PM
Selenium	0.027	0.0010		mg/L	1	10/4/2012 2:01:04 PM
Uranium	0.0071	0.0010		mg/L	1	9/27/2012 1:45:55 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: IDC
Mercury	ND	0.00020		mg/L	1	9/18/2012 1:35:23 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/15/2012 4:37:11 AM
Toluene	ND	1.0		µg/L	1	9/15/2012 4:37:11 AM
Ethylbenzene	ND	1.0		µg/L	1	9/15/2012 4:37:11 AM
Naphthalene	ND	2.0		µg/L	1	9/15/2012 4:37:11 AM
Xylenes, Total	ND	2.0		µg/L	1	9/15/2012 4:37:11 AM
Surr: 1,2-Dichloroethane-d4	87.7	70-130		%REC	1	9/15/2012 4:37:11 AM
Surr: 4-Bromofluorobenzene	91.4	70-130		%REC	1	9/15/2012 4:37:11 AM
Surr: Dibromofluoromethane	84.9	70-130		%REC	1	9/15/2012 4:37:11 AM
Surr: Toluene-d8	99.1	70-130		%REC	1	9/15/2012 4:37:11 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: IDC
Conductivity	4300	0.010		µmhos/cm	1	9/14/2012 8:23:11 PM
<b>SM2320B: ALKALINITY</b>						Analyst: IDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Yates Lattion Pit

Collection Date: 9/12/2012 10:40:00 AM

Lab ID: 1209594-004

Matrix: AQUEOUS

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>SM2320B: ALKALINITY</b>						Analyst: IDC
Bicarbonate (As CaCO3)	140	20		mg/L CaCO3	1	9/14/2012 8:23:11 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/14/2012 8:23:11 PM
Total Alkalinity (as CaCO3)	140	20		mg/L CaCO3	1	9/14/2012 8:23:11 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	3370	100		mg/L	1	9/18/2012 4:26:00 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

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Analytical Report

Lab Order 1209594

Date Reported: 10/23/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: TRIP BLANK

Project: Yates Lattion Pit

Collection Date:

Lab ID: 1209594-005

Matrix: TRIP BLANK

Received Date: 9/14/2012 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/15/2012 5:05:16 AM
Toluene	ND	1.0		µg/L	1	9/15/2012 5:05:16 AM
Ethylbenzene	ND	1.0		µg/L	1	9/15/2012 5:05:16 AM
Naphthalene	ND	2.0		µg/L	1	9/15/2012 5:05:16 AM
Xylenes, Total	ND	2.0		µg/L	1	9/15/2012 5:05:16 AM
Surr: 1,2-Dichloroethane-d4	90.8	70-130		%REC	1	9/15/2012 5:05:16 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%REC	1	9/15/2012 5:05:16 AM
Surr: Dibromofluoromethane	83.2	70-130		%REC	1	9/15/2012 5:05:16 AM
Surr: Toluene-d8	96.5	70-130		%REC	1	9/15/2012 5:05:16 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2		
	1209594-01		1209594-02		1209594-03		1209594-04		
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sodium	230	10.00	200	8.70	33	1.44	86	3.74	
Potassium	4.2	0.11	3.2	0.08	2.3	0.06	4.1	0.10	
Calcium	830	41.42	760	37.92	270	13.47	570	28.44	
Magnesium	320	26.34	300	24.69	97	7.98	180	14.81	
<b>Total Cations</b>		77.87		71.40		22.95		47.10	
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sulfate	2000	41.64	2000	41.64	990	20.61	1300	27.07	
Chloride	1600	45.13	1200	33.85	45	1.27	940	26.52	
Bicarbonate (CaCO <sub>3</sub> )	160	3.20	160	3.20	180	3.60	140	2.80	
Carbonate (CaCO <sub>3</sub> )									
Phosphate (P)									
Nitrite (N)					-		3.2	0.23	
Nitrate (N)	1.1	0.06	1.3	0.07	1.3	0.07	0.60	0.03	
Fluoride	1.6	0.02	1.5	0.02	0.11	0.00	1.2	0.02	
Bromide									
<b>Total Anions</b>		90.05		78.78		25.55		56.66	
Elect. Cond. (µMhos/cm)	6600		5800		1900		4300		
CATION/ANION RATIO									
% Difference	0.86	7	0.91	5	0.90	5	0.83	9	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>									
TDS (measured)	5270		4370		1580		3370		
TDS (calculated)	5083		4562		1547		3180		
Ratio meas TDS:calc TDS	1.0		1.0		1.0		1.1		
Ratio Meas. TDS:EC	0.80		0.75		0.83		0.78		
Ratio Calc. TDS:EC	0.77		0.79		0.81		0.74		
Ratio of anion sum:EC	1.4		1.4		1.3		1.3		
Ratio of cation sum:EC	1.2		1.2		1.2		1.1		

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R5587	RunNo:	5587					
Prep Date:		Analysis Date:	9/17/2012	SeqNo:	160071	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R5587	RunNo:	5587					
Prep Date:		Analysis Date:	9/17/2012	SeqNo:	160072	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.8	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Calcium	48	1.0	50.00	0	95.9	85	115			
Chromium	0.48	0.0060	0.5000	0	96.6	85	115			
Iron	0.48	0.020	0.5000	0.002020	95.9	85	115			
Magnesium	49	1.0	50.00	0	98.0	85	115			
Manganese	0.48	0.0020	0.5000	0	96.0	85	115			
Potassium	47	1.0	50.00	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Sodium	48	1.0	50.00	0	96.4	85	115			
Zinc	0.47	0.010	0.5000	0	95.0	85	115			

Sample ID	1209592-001CMS	SampType:	MS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R5587	RunNo:	5587					
Prep Date:		Analysis Date:	9/17/2012	SeqNo:	160077	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0.03755	93.5	70	130			
Cadmium	0.50	0.0020	0.5000	0	101	70	130			
Chromium	0.57	0.0060	0.5000	0.1003	93.8	70	130			
Potassium	60	1.0	50.00	10.58	98.2	70	130			
Silver	0.10	0.0050	0.1000	0	105	70	130			
Zinc	0.47	0.010	0.5000	0.05281	82.7	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
P Sample pH greater than 2	R RPD outside accepted recovery limits



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594

23-Oct-12

Client: Safety &amp; Environmental Solutions

Project: Yates Lattion Pit

Sample ID	1209592-001CMSD		SampType:	MSD		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	R5587		RunNo:	5587			
Prep Date:			Analysis Date:	9/17/2012		SeqNo:	160078		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0.03755	94.2	70	130	0.720	20	
Cadmium	0.51	0.0020	0.5000	0	101	70	130	0.433	20	
Chromium	0.57	0.0060	0.5000	0.1003	93.3	70	130	0.387	20	
Potassium	60	1.0	50.00	10.58	99.4	70	130	1.04	20	
Silver	0.11	0.0050	0.1000	0	106	70	130	1.19	20	
Zinc	0.47	0.010	0.5000	0.05281	83.0	70	130	0.370	20	

Sample ID	1209592-001CMS		SampType:	MS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	R5587		RunNo:	5587			
Prep Date:			Analysis Date:	9/17/2012		SeqNo:	160083		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	3.8	0.010	2.500	1.409	95.7	70	130			

Sample ID	1209592-001CMSD		SampType:	MSD		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	R5587		RunNo:	5587			
Prep Date:			Analysis Date:	9/17/2012		SeqNo:	160084		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	3.9	0.010	2.500	1.409	99.1	70	130	2.22	20	

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R5654		RunNo:	5654			
Prep Date:			Analysis Date:	9/20/2012		SeqNo:	161891		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R5654		RunNo:	5654			
Prep Date:			Analysis Date:	9/20/2012		SeqNo:	161892		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	51	1.0	50.00	0	103	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	1209632-001CMS	SampType:	MS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R5654	RunNo:	5654					
Prep Date:		Analysis Date:	9/20/2012	SeqNo:	161948	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	78	1.0	50.00	27.57	101	70	130			
Magnesium	58	1.0	50.00	6.323	104	70	130			

Sample ID	1209632-001CMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R5654	RunNo:	5654					
Prep Date:		Analysis Date:	9/20/2012	SeqNo:	161949	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	78	1.0	50.00	27.57	102	70	130	0.345	20	
Magnesium	59	1.0	50.00	6.323	105	70	130	0.680	20	

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2
- R

RPD outside accepted recovery limits

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1209594

23-Oct-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID	<b>1209596-001BMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA 200.8: Dissolved Metals</b>			
Client ID:	<b>BatchQC</b>		Batch ID:	<b>R5818</b>		RunNo:	<b>5818</b>			
Prep Date:			Analysis Date:	<b>9/27/2012</b>		SeqNo:	<b>167338</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0.0003032	102	70	130			
Copper	0.028	0.0010	0.02500	0.003465	97.4	70	130			
Lead	0.026	0.0010	0.02500	.00005721	103	70	130			
Uranium	0.028	0.0010	0.02500	0.001623	106	70	130			

Sample ID	<b>1209597-002CMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA 200.8: Dissolved Metals</b>			
Client ID:	<b>BatchQC</b>		Batch ID:	<b>R5818</b>		RunNo:	<b>5818</b>			
Prep Date:			Analysis Date:	<b>9/27/2012</b>		SeqNo:	<b>167344</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.11	0.0050	0.1250	0.004703	88.0	70	130			
Lead	0.13	0.0050	0.1250	0	102	70	130			

Sample ID	<b>1209B02-006AMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA 200.8: Dissolved Metals</b>			
Client ID:	<b>BatchQC</b>		Batch ID:	<b>R5818</b>		RunNo:	<b>5818</b>			
Prep Date:			Analysis Date:	<b>9/27/2012</b>		SeqNo:	<b>167354</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0.0003463	97.4	70	130			
Lead	0.026	0.0010	0.02500	0.0004874	101	70	130			
Uranium	0.033	0.0010	0.02500	0.01025	89.4	70	130			

Sample ID	<b>LCS</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA 200.8: Dissolved Metals</b>			
Client ID:	<b>LCSW</b>		Batch ID:	<b>R5818</b>		RunNo:	<b>5818</b>			
Prep Date:			Analysis Date:	<b>9/27/2012</b>		SeqNo:	<b>167361</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	104	85	115			
Copper	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.026	0.0010	0.02500	0	102	85	115			
Uranium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID	<b>LCS</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA 200.8: Dissolved Metals</b>			
Client ID:	<b>LCSW</b>		Batch ID:	<b>R5818</b>		RunNo:	<b>5818</b>			
Prep Date:			Analysis Date:	<b>9/27/2012</b>		SeqNo:	<b>167362</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.2	85	115			
Copper	0.026	0.0010	0.02500	.00009623	103	85	115			
Lead	0.025	0.0010	0.02500	0	102	85	115			
Uranium	0.024	0.0010	0.02500	0	96.9	85	115			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594

23-Oct-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5818</b>		RunNo: <b>5818</b>							
Prep Date:	Analysis Date: <b>9/27/2012</b>		SeqNo: <b>167365</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Uranium	ND	0.0010								

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5818</b>		RunNo: <b>5818</b>							
Prep Date:	Analysis Date: <b>9/27/2012</b>		SeqNo: <b>167367</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Uranium	ND	0.0010								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R5990</b>		RunNo: <b>5990</b>							
Prep Date:	Analysis Date: <b>10/4/2012</b>		SeqNo: <b>172606</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R5990</b>		RunNo: <b>5990</b>							
Prep Date:	Analysis Date: <b>10/4/2012</b>		SeqNo: <b>172607</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.028	0.0010	0.02500	0	112	85	115			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5990</b>		RunNo: <b>5990</b>							
Prep Date:	Analysis Date: <b>10/4/2012</b>		SeqNo: <b>172608</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5990</b>		RunNo: <b>5990</b>							
Prep Date:	Analysis Date: <b>10/4/2012</b>		SeqNo: <b>172610</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1209594

23-Oct-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID	1210352-002AMS		SampType: MS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R6315		RunNo: 6315					
Prep Date:			Analysis Date: 10/17/2012		SeqNo: 181923		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.025	0.0010	0.02500	.00005303	99.3	70	130			
Selenium	0.026	0.0010	0.02500	0.0006086	101	70	130			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R6315		RunNo: 6315					
Prep Date:			Analysis Date: 10/17/2012		SeqNo: 181941		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	99.7	85	115			
Lead	0.025	0.0010	0.02500	0	99.9	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R6315		RunNo: 6315					
Prep Date:			Analysis Date: 10/17/2012		SeqNo: 181942		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0.0001617	99.7	85	115			
Lead	0.025	0.0010	0.02500	0	99.6	85	115			
Selenium	0.027	0.0010	0.02500	0	106	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R6315		RunNo: 6315					
Prep Date:			Analysis Date: 10/17/2012		SeqNo: 181943		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0.0001913	100	85	115			
Lead	0.025	0.0010	0.02500	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R6315			RunNo: 6315					
Prep Date:		Analysis Date: 10/17/2012			SeqNo: 181944		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW	Batch ID: R6315			RunNo: 6315						
Prep Date:		Analysis Date: 10/17/2012			SeqNo: 181945		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		ND	0.0010								
Lead		ND	0.0010								
Selenium		ND	0.0010								

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R6315		RunNo:	6315					
Prep Date:		Analysis Date:	10/17/2012		SeqNo:	181946		Units:	mg/L		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		ND	0.0010								
Lead		ND	0.0010								
Selenium		ND	0.0010								

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594

23-Oct-12

Client: Safety &amp; Environmental Solutions

Project: Yates Lattion Pit

Sample ID	MB-3781		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 3781		RunNo: 5593					
Prep Date:	9/17/2012		Analysis Date: 9/18/2012		SeqNo: 161626		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-3781			SampType:	LCS		TestCode:	EPA Method 245.1: Mercury			
Client ID:	LCSW			Batch ID:	3781		RunNo:	5593			
Prep Date:	9/17/2012			Analysis Date:	9/18/2012		SeqNo:	161627		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0050	0.00020	0.005000	0	99.3	80	120				

Sample ID	1209231-001BMS		SampType: MS		TestCode: EPA Method 245.1: Mercury					
Client ID:	BatchQC		Batch ID: 3781		RunNo: 5593					
Prep Date:	9/17/2012		Analysis Date: 9/18/2012		SeqNo: 161630		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.0	75	125			

Sample ID	1209231-001BMSD			SampType:	MSD		TestCode:	EPA Method 245.1: Mercury			
Client ID:	BatchQC			Batch ID:	3781		RunNo:	5593			
Prep Date:	9/17/2012		Analysis Date:	9/18/2012		SeqNo:	161631		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0049	0.00020	0.005000	0	97.9	75	125	0.138	20		

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH greater than 2

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1209594

23-Oct-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5567</b>		RunNo: <b>5567</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159332</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Bromide	ND	0.10								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R5567</b>		RunNo: <b>5567</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159333</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			

Sample ID <b>1209585-007AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>R5567</b>		RunNo: <b>5567</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159363</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.3	0.10	2.500	0.1036	88.4	83.3	107			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5567</b>		RunNo: <b>5567</b>							
Prep Date:	Analysis Date: <b>9/15/2012</b>		SeqNo: <b>159386</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Bromide	ND	0.10								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R5567</b>		RunNo: <b>5567</b>							
Prep Date:	Analysis Date: <b>9/15/2012</b>		SeqNo: <b>159387</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	93.1	90	110			
Bromide	2.3	0.10	2.500	0	91.2	90	110			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5581</b>		RunNo: <b>5581</b>							
Prep Date:	Analysis Date: <b>9/17/2012</b>		SeqNo: <b>159756</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R5581			RunNo: 5581					
Prep Date:			Analysis Date: 9/17/2012			SeqNo: 159757		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	4.8	0.50	5.000	0	96.6	90	110				
Phosphorus, Orthophosphate (As P	5.1	0.50	5.000	0	103	90	110				
Sulfate	9.7	0.50	10.00	0	97.3	90	110				

Sample ID	1209643-003AMS		SampType: MS			TestCode: EPA Method 300.0: Anions					
Client ID:	BatchQC		Batch ID: R5581			RunNo: 5581					
Prep Date:			Analysis Date: 9/17/2012			SeqNo: 159772		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phosphorus, Orthophosphate (As P	6.4	0.50	5.000	1.672	93.8	74.5	115				

Sample ID	1209643-003AMSD		SampType: MSD			TestCode: EPA Method 300.0: Anions					
Client ID:	BatchQC		Batch ID: R5581			RunNo: 5581					
Prep Date:			Analysis Date: 9/17/2012			SeqNo: 159773		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phosphorus, Orthophosphate (As P	6.4	0.50	5.000	1.672	95.3	74.5	115	1.24	20		

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW		Batch ID: R5586			RunNo: 5586					
Prep Date:			Analysis Date: 9/17/2012			SeqNo: 159954		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite as N	ND	0.20									

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R5586			RunNo: 5586					
Prep Date:			Analysis Date: 9/17/2012			SeqNo: 159955		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite as N	3.6	0.20	3.500	0	102	90	110				

Sample ID	1209630-006BMS		SampType: MS			TestCode: EPA Method 300.0: Anions					
Client ID:	BatchQC		Batch ID: R5586			RunNo: 5586					
Prep Date:			Analysis Date: 9/17/2012			SeqNo: 160002		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite as N	7.2	0.20	3.500	3.670	101	88.6	110				

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2
- R

RPD outside accepted recovery limits



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	1209630-006BMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions						
Client ID:	BatchQC	Batch ID:	R5586	RunNo:	5586						
Prep Date:		Analysis Date:	9/17/2012	SeqNo:	160003	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite as N	7.1	0.20	3.500	3.670	99.3	88.6	110	1.00	20		

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1209594

23-Oct-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID <b>5ml rb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R5561</b>		RunNo: <b>5561</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159037</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.3	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Sample ID <b>100ng lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R5561</b>		RunNo: <b>5561</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159040</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.8	70	130			
Toluene	18	1.0	20.00	0	89.4	80	120			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.8	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.3	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.6	70	130			
Surr: Toluene-d8	9.7		10.00		96.5	70	130			

Sample ID <b>1209569-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>R5561</b>		RunNo: <b>5561</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159041</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	42	2.0	40.00	0	105	66.8	128			
Toluene	38	2.0	40.00	0	95.9	70	130			
Surr: 1,2-Dichloroethane-d4	18		20.00		88.9	70	130			
Surr: 4-Bromofluorobenzene	19		20.00		94.1	70	130			
Surr: Dibromofluoromethane	16		20.00		82.5	70	130			
Surr: Toluene-d8	19		20.00		96.6	70	130			

Sample ID <b>1209569-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>R5561</b>		RunNo: <b>5561</b>							
Prep Date:	Analysis Date: <b>9/14/2012</b>		SeqNo: <b>159042</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	38	2.0	40.00	0	95.6	66.8	128	9.16	16.7	
Toluene	35	2.0	40.00	0	88.5	70	130	8.02	18.7	
Surr: 1,2-Dichloroethane-d4	17		20.00		86.5	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1209594

23-Oct-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID	<b>1209569-001amsd</b>		SampType:	<b>MSD</b>		TestCode:	<b>EPA Method 8260: Volatiles Short List</b>			
Client ID:	<b>BatchQC</b>		Batch ID:	<b>R5561</b>		RunNo:	<b>5561</b>			
Prep Date:			Analysis Date:	<b>9/14/2012</b>		SeqNo:	<b>159042</b>		Units:	<b>µg/L</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	19		20.00		94.3	70	130	0	0	
Surr: Dibromofluoromethane	16		20.00		79.2	70	130	0	0	
Surr: Toluene-d8	20		20.00		97.9	70	130	0	0	

Sample ID	<b>100NG LCS2</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8260: Volatiles Short List</b>			
Client ID:	<b>LCSW</b>		Batch ID:	<b>R5561</b>		RunNo:	<b>5561</b>			
Prep Date:			Analysis Date:	<b>9/15/2012</b>		SeqNo:	<b>159068</b>		Units:	<b>µg/L</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	19	1.0	20.00	0	96.9	80	120			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.6	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.1	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	9.8		10.00		98.5	70	130			

Sample ID	<b>1209594-001ams</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA Method 8260: Volatiles Short List</b>			
Client ID:	<b>MW-1</b>		Batch ID:	<b>R5561</b>		RunNo:	<b>5561</b>			
Prep Date:			Analysis Date:	<b>9/15/2012</b>		SeqNo:	<b>159069</b>		Units:	<b>µg/L</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	42	2.0	40.00	0	106	66.8	128			
Toluene	38	2.0	40.00	0	94.5	70	130			
Surr: 1,2-Dichloroethane-d4	18		20.00		90.2	70	130			
Surr: 4-Bromofluorobenzene	18		20.00		91.1	70	130			
Surr: Dibromofluoromethane	17		20.00		86.2	70	130			
Surr: Toluene-d8	20		20.00		98.9	70	130			

Sample ID	<b>1209594-001amsd</b>		SampType:	<b>MSD</b>		TestCode:	<b>EPA Method 8260: Volatiles Short List</b>			
Client ID:	<b>MW-1</b>		Batch ID:	<b>R5561</b>		RunNo:	<b>5561</b>			
Prep Date:			Analysis Date:	<b>9/15/2012</b>		SeqNo:	<b>159070</b>		Units:	<b>µg/L</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	37	2.0	40.00	0	92.1	66.8	128	14.0	16.7	
Toluene	33	2.0	40.00	0	82.3	70	130	13.8	18.7	
Surr: 1,2-Dichloroethane-d4	18		20.00		91.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	18		20.00		90.5	70	130	0	0	
Surr: Dibromofluoromethane	17		20.00		85.0	70	130	0	0	
Surr: Toluene-d8	19		20.00		97.1	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 P Sample pH greater than 2

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 R RPD outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	vcb2	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R5561	RunNo:	5561					
Prep Date:		Analysis Date:	9/15/2012	SeqNo:	159082	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.2	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		90.6	70	130			
Surr: Dibromofluoromethane	8.4		10.00		83.6	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions

Project: Yates Lattion Pit

Sample ID 1209593-001a dup		SampType: DUP		TestCode: EPA 120.1: Specific Conductance						
Client ID: BatchQC		Batch ID: R5566		RunNo: 5566						
Prep Date:		Analysis Date: 9/14/2012		SeqNo: 159410		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	540	0.010						0.411	20	

Sample ID 1209596-003a dup		SampType: DUP		TestCode: EPA 120.1: Specific Conductance						
Client ID: BatchQC		Batch ID: R5566		RunNo: 5566						
Prep Date:		Analysis Date: 9/14/2012		SeqNo: 159423		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	1800	0.010						0.224	20	

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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## QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594

23-Oct-12

Client: Safety &amp; Environmental Solutions

Project: Yates Lattion Pit

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159298	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159299	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	88.1	104			

Sample ID	1209585-007a ms	SampType:	MS	TestCode:	SM2320B: Alkalinity					
Client ID:	BatchQC	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159306	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20	80.00	0	0	62.6	110			S

Sample ID	1209585-007a msd	SampType:	MSD	TestCode:	SM2320B: Alkalinity					
Client ID:	BatchQC	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159307	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20	80.00	0	0	59.9	111	0	10	S

Sample ID	mb-2	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159313	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159314	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	0	102	88.1	104			

Sample ID	1209596-003a ms	SampType:	MS	TestCode:	SM2320B: Alkalinity					
Client ID:	BatchQC	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159326	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	84	20	80.00	69.72	17.7	62.6	110			S

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH greater than 2

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	1209596-003a msd	SampType:	MSD	TestCode:	SM2320B: Alkalinity					
Client ID:	BatchQC	Batch ID:	R5566	RunNo:	5566					
Prep Date:		Analysis Date:	9/14/2012	SeqNo:	159327	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	69.72	15.9	59.9	111	1.78	10	S

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH greater than 2
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- R

RPD outside accepted recovery limits

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1209594  
23-Oct-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB-3782	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids						
Client ID:	PBW	Batch ID:	3782	RunNo:	5601						
Prep Date:	9/17/2012	Analysis Date:	9/18/2012	SeqNo:	160421	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-3782	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids						
Client ID:	LCSW	Batch ID:	3782	RunNo:	5601						
Prep Date:	9/17/2012	Analysis Date:	9/18/2012	SeqNo:	160422	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1020	20.0	1000	0	102	80	120				

Sample ID	1209606-008AMS	SampType:	MS	TestCode:	SM2540C MOD: Total Dissolved Solids						
Client ID:	BatchQC	Batch ID:	3782	RunNo:	5601						
Prep Date:	9/17/2012	Analysis Date:	9/18/2012	SeqNo:	160438	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1460	20.0	1000	442.0	102	80	120				

Sample ID	1209606-008AMSD	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids						
Client ID:	BatchQC	Batch ID:	3782	RunNo:	5601						
Prep Date:	9/17/2012	Analysis Date:	9/18/2012	SeqNo:	160439	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1460	20.0	1000	442.0	102	80	120	0.0684	20		

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2
- R

RPD outside accepted recovery limits





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety Env Solutions** Work Order Number: **1209594**

Received by/date: *[Signature]* **09/14/12**  
Logged By: **Ashley Gallegos** **9/14/2012 9:15:00 AM**

Completed By: **Ashley Gallegos** **9/14/2012 11:33:10 AM**

Reviewed By: *mg* **09/14/12**

### Chain of Custody

1. Were seals intact? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

### Log In

4. Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: **12**
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? **2 or >12 unless noted**
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by: *[Signature]*

### Special Handling (if applicable)

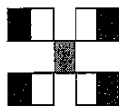
17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
By Whom: \_\_\_\_\_ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
Regarding: \_\_\_\_\_  
Client Instructions: \_\_\_\_\_

18. Additional remarks:

### 19. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

Chain-of-Custody Record				Turn-Around Time:	
Client: <u>Safety &amp; Environmental Solution</u>		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush		Project Name: <u>YATES</u>	
Mailing Address: <u>703. E Clinton</u>				Project #: <u>227000 P.T</u>	
Phone #: <u>606662, N.W</u>				Project Manager: <u>Boyer, Dave</u>	
email or Fax#:				Sampler: <u>Sosa, Jerry</u>	
QA/QC Package: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)				On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Accreditation <input type="checkbox"/> NELAP <input type="checkbox"/> Other				Sample Temperature: <u>10</u>	
<input type="checkbox"/> EDD (Type)				HEAL No. <u>209574</u>	
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
09/12	0920	1420	mw-1	7	Hel
09/12	0950	1420	mw-4	7	Hel
09/12	1015	1420	mw-3	7	Hel
09/12	1040	1420	mw-2	7	Hel
			TRIP BLANK	10A2	Hel
Date:	Time:	Relinquished by:		Received by:	Date Time
9/13/07	0700	Sosa, Jerry		D. Boyer	9/13/07
Date:	Time:	Relinquished by:		Received by:	Date Time
9/13/07	1700	D. Boyer			9/14/07

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

December 21, 2012

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 390-7067  
FAX (575) 393-4388

RE: Yates Lattion Pit

OrderNo.: 1212363

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/7/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Yates Lattion Pit

Collection Date: 12/6/2012 9:15:00 AM

Lab ID: 1212363-001

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.0	0.10		mg/L	1	12/7/2012 7:52:15 PM
Chloride	1700	100		mg/L	200	12/10/2012 4:54:13 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	12/7/2012 8:04:39 PM
Bromide	ND	2.0		mg/L	20	12/7/2012 8:04:39 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	12/7/2012 7:52:15 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	12/7/2012 7:52:15 PM
Sulfate	2000	25		mg/L	50	12/10/2012 4:41:49 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Barium	0.022	0.0020		mg/L	1	12/11/2012 6:41:59 PM
Cadmium	ND	0.0020		mg/L	1	12/11/2012 6:41:59 PM
Calcium	940	10		mg/L	10	12/12/2012 4:36:46 PM
Chromium	ND	0.0060		mg/L	1	12/11/2012 6:41:59 PM
Copper	ND	0.0060		mg/L	1	12/13/2012 6:19:49 PM
Iron	ND	0.020		mg/L	1	12/11/2012 6:41:59 PM
Magnesium	370	5.0		mg/L	5	12/11/2012 6:45:49 PM
Manganese	0.20	0.0020	*	mg/L	1	12/11/2012 6:41:59 PM
Potassium	5.5	1.0		mg/L	1	12/11/2012 6:41:59 PM
Silver	ND	0.0050		mg/L	1	12/11/2012 6:41:59 PM
Sodium	310	5.0		mg/L	5	12/11/2012 6:45:49 PM
Zinc	0.033	0.010		mg/L	1	12/11/2012 6:41:59 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0018	0.0010		mg/L	1	12/11/2012 2:05:33 PM
Lead	ND	0.0010		mg/L	1	12/11/2012 2:05:33 PM
Selenium	0.0093	0.0050		mg/L	5	12/17/2012 4:50:05 PM
Uranium	0.0045	0.0010		mg/L	1	12/11/2012 2:05:33 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	12/11/2012 10:41:19 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: JMP
Benzene	ND	1.0		µg/L	1	12/14/2012 2:19:38 PM
Toluene	ND	1.0		µg/L	1	12/14/2012 2:19:38 PM
Ethylbenzene	ND	1.0		µg/L	1	12/14/2012 2:19:38 PM
Naphthalene	ND	2.0		µg/L	1	12/14/2012 2:19:38 PM
Xylenes, Total	ND	2.0		µg/L	1	12/14/2012 2:19:38 PM
Surr: 1,2-Dichloroethane-d4	89.5	70-130		%REC	1	12/14/2012 2:19:38 PM
Surr: 4-Bromofluorobenzene	90.0	70-130		%REC	1	12/14/2012 2:19:38 PM
Surr: Dibromofluoromethane	94.8	70-130		%REC	1	12/14/2012 2:19:38 PM
Surr: Toluene-d8	90.5	70-130		%REC	1	12/14/2012 2:19:38 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	7000	0.010		µmhos/cm	1	12/7/2012 5:26:01 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-1

Project: Yates Lattion Pit

Collection Date: 12/6/2012 9:15:00 AM

Lab ID: 1212363-001

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: JML
pH	7.13	1.68	H	pH units	1	12/13/2012 1:15:48 PM
SM2320B: ALKALINITY						
						Analyst: JML
Bicarbonate (As CaCO3)	170	20		mg/L CaCO3	1	12/7/2012 5:26:01 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/7/2012 5:26:01 PM
Total Alkalinity (as CaCO3)	170	20		mg/L CaCO3	1	12/7/2012 5:26:01 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: JML
Total Dissolved Solids	5760	40.0		mg/L	1	12/13/2012 4:29:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

## Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Yates Lattion Pit

Collection Date: 12/6/2012 10:05:00 AM

Lab ID: 1212363-002

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.1	0.10		mg/L	1	12/7/2012 8:17:04 PM
Chloride	1200	50		mg/L	100	12/10/2012 5:19:02 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	12/7/2012 8:29:29 PM
Bromide	ND	2.0		mg/L	20	12/7/2012 8:29:29 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	12/7/2012 8:17:04 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	12/7/2012 8:17:04 PM
Sulfate	1800	50		mg/L	100	12/10/2012 5:19:02 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Barium	0.016	0.0020		mg/L	1	12/11/2012 7:04:41 PM
Cadmium	ND	0.0020		mg/L	1	12/11/2012 7:04:41 PM
Calcium	780	10		mg/L	10	12/12/2012 4:40:29 PM
Chromium	ND	0.0060		mg/L	1	12/11/2012 7:04:41 PM
Copper	ND	0.0060		mg/L	1	12/13/2012 6:23:37 PM
Iron	0.086	0.020		mg/L	1	12/11/2012 7:04:41 PM
Magnesium	320	5.0		mg/L	5	12/11/2012 7:08:29 PM
Manganese	0.076	0.0020	*	mg/L	1	12/11/2012 7:04:41 PM
Potassium	4.2	1.0		mg/L	1	12/11/2012 7:04:41 PM
Silver	ND	0.0050		mg/L	1	12/11/2012 7:04:41 PM
Sodium	230	5.0		mg/L	5	12/11/2012 7:08:29 PM
Zinc	0.020	0.010		mg/L	1	12/11/2012 7:04:41 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0014	0.0010		mg/L	1	12/11/2012 2:09:29 PM
Lead	ND	0.0010		mg/L	1	12/11/2012 2:09:29 PM
Selenium	0.0059	0.0050		mg/L	5	12/17/2012 4:55:46 PM
Uranium	0.0037	0.0010		mg/L	1	12/11/2012 2:09:29 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	12/11/2012 10:43:04 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: JMP
Benzene	ND	1.0		µg/L	1	12/14/2012 3:50:18 PM
Toluene	ND	1.0		µg/L	1	12/14/2012 3:50:18 PM
Ethylbenzene	ND	1.0		µg/L	1	12/14/2012 3:50:18 PM
Naphthalene	ND	2.0		µg/L	1	12/14/2012 3:50:18 PM
Xylenes, Total	ND	2.0		µg/L	1	12/14/2012 3:50:18 PM
Surr: 1,2-Dichloroethane-d4	90.3	70-130		%REC	1	12/14/2012 3:50:18 PM
Surr: 4-Bromofluorobenzene	88.7	70-130		%REC	1	12/14/2012 3:50:18 PM
Surr: Dibromofluoromethane	96.0	70-130		%REC	1	12/14/2012 3:50:18 PM
Surr: Toluene-d8	95.0	70-130		%REC	1	12/14/2012 3:50:18 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	5700	0.010		µmhos/cm	1	12/7/2012 5:39:26 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-4

Project: Yates Lattion Pit

Collection Date: 12/6/2012 10:05:00 AM

Lab ID: 1212363-002

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: JML
pH	7.26	1.68	H	pH units	1	12/13/2012 1:19:48 PM
SM2320B: ALKALINITY						
						Analyst: JML
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	12/7/2012 5:39:26 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/7/2012 5:39:26 PM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	12/7/2012 5:39:26 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: JML
Total Dissolved Solids	4550	200		mg/L	1	12/13/2012 4:29:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

## Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Yates Lattion Pit

Collection Date: 12/6/2012 10:40:00 AM

Lab ID: 1212363-003

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.3	0.10		mg/L	1	12/7/2012 8:41:53 PM
Chloride	45	10		mg/L	20	12/7/2012 8:54:19 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	12/7/2012 8:41:53 PM
Bromide	0.10	0.10		mg/L	1	12/7/2012 8:41:53 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	12/7/2012 8:41:53 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	12/7/2012 8:41:53 PM
Sulfate	1000	10		mg/L	20	12/7/2012 8:54:19 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Barium	0.019	0.0020		mg/L	1	12/11/2012 7:12:05 PM
Cadmium	ND	0.0020		mg/L	1	12/11/2012 7:12:05 PM
Calcium	270	5.0		mg/L	5	12/11/2012 7:15:45 PM
Chromium	ND	0.0060		mg/L	1	12/11/2012 7:12:05 PM
Copper	ND	0.0060		mg/L	1	12/13/2012 6:27:26 PM
Iron	ND	0.020		mg/L	1	12/11/2012 7:12:05 PM
Magnesium	110	5.0		mg/L	5	12/11/2012 7:15:45 PM
Manganese	ND	0.0020		mg/L	1	12/11/2012 7:12:05 PM
Potassium	3.2	1.0		mg/L	1	12/11/2012 7:12:05 PM
Silver	ND	0.0050		mg/L	1	12/11/2012 7:12:05 PM
Sodium	39	1.0		mg/L	1	12/11/2012 7:12:05 PM
Zinc	ND	0.010		mg/L	1	12/11/2012 7:12:05 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	12/11/2012 2:17:22 PM
Lead	ND	0.0010		mg/L	1	12/11/2012 2:17:22 PM
Selenium	0.0010	0.0010		mg/L	1	12/12/2012 1:28:59 PM
Uranium	0.0011	0.0010		mg/L	1	12/11/2012 2:17:22 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	12/11/2012 10:52:40 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: JMP
Benzene	ND	1.0		µg/L	1	12/14/2012 4:20:31 PM
Toluene	ND	1.0		µg/L	1	12/14/2012 4:20:31 PM
Ethylbenzene	ND	1.0		µg/L	1	12/14/2012 4:20:31 PM
Naphthalene	ND	2.0		µg/L	1	12/14/2012 4:20:31 PM
Xylenes, Total	ND	2.0		µg/L	1	12/14/2012 4:20:31 PM
Surr: 1,2-Dichloroethane-d4	93.7	70-130		%REC	1	12/14/2012 4:20:31 PM
Surr: 4-Bromofluorobenzene	92.6	70-130		%REC	1	12/14/2012 4:20:31 PM
Surr: Dibromofluoromethane	98.8	70-130		%REC	1	12/14/2012 4:20:31 PM
Surr: Toluene-d8	96.9	70-130		%REC	1	12/14/2012 4:20:31 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	1800	0.010		µmhos/cm	1	12/7/2012 5:51:32 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-3

Project: Yates Lattion Pit

Collection Date: 12/6/2012 10:40:00 AM

Lab ID: 1212363-003

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: JML
pH	7.60	1.68	H	pH units	1	12/13/2012 1:24:07 PM
SM2320B: ALKALINITY						
						Analyst: JML
Bicarbonate (As CaCO3)	180	20		mg/L CaCO3	1	12/7/2012 5:51:32 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/7/2012 5:51:32 PM
Total Alkalinity (as CaCO3)	180	20		mg/L CaCO3	1	12/7/2012 5:51:32 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: JML
Total Dissolved Solids	1600	20.0		mg/L	1	12/13/2012 4:29:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

## Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Yates Lattion Pit

Collection Date: 12/6/2012 11:00:00 AM

Lab ID: 1212363-004

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	0.98	0.10		mg/L	1	12/7/2012 9:06:43 PM
Chloride	890	25		mg/L	50	12/12/2012 12:30:05 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	12/7/2012 9:19:07 PM
Bromide	ND	2.0		mg/L	20	12/7/2012 9:19:07 PM
Nitrogen, Nitrate (As N)	4.5	2.0		mg/L	20	12/7/2012 9:19:07 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	12/7/2012 9:06:43 PM
Sulfate	1200	25		mg/L	50	12/10/2012 6:33:30 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Barium	0.016	0.0020		mg/L	1	12/11/2012 7:19:33 PM
Cadmium	ND	0.0020		mg/L	1	12/11/2012 7:19:33 PM
Calcium	600	10		mg/L	10	12/12/2012 4:44:03 PM
Chromium	ND	0.0060		mg/L	1	12/11/2012 7:19:33 PM
Copper	ND	0.0060		mg/L	1	12/13/2012 6:31:05 PM
Iron	ND	0.020		mg/L	1	12/11/2012 7:19:33 PM
Magnesium	200	5.0		mg/L	5	12/11/2012 9:44:51 PM
Manganese	0.0023	0.0020		mg/L	1	12/11/2012 7:19:33 PM
Potassium	5.1	1.0		mg/L	1	12/11/2012 7:19:33 PM
Silver	ND	0.0050		mg/L	1	12/11/2012 7:19:33 PM
Sodium	100	1.0		mg/L	1	12/11/2012 7:19:33 PM
Zinc	ND	0.010		mg/L	1	12/11/2012 7:19:33 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0018	0.0010		mg/L	1	12/11/2012 2:21:18 PM
Lead	ND	0.0010		mg/L	1	12/11/2012 2:21:18 PM
Selenium	0.026	0.0050		mg/L	5	12/17/2012 4:57:38 PM
Uranium	0.0078	0.0010		mg/L	1	12/11/2012 2:21:18 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	12/11/2012 10:54:25 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: JMP
Benzene	ND	1.0		µg/L	1	12/14/2012 4:50:52 PM
Toluene	ND	1.0		µg/L	1	12/14/2012 4:50:52 PM
Ethylbenzene	ND	1.0		µg/L	1	12/14/2012 4:50:52 PM
Naphthalene	ND	2.0		µg/L	1	12/14/2012 4:50:52 PM
Xylenes, Total	ND	2.0		µg/L	1	12/14/2012 4:50:52 PM
Surr: 1,2-Dichloroethane-d4	86.9	70-130		%REC	1	12/14/2012 4:50:52 PM
Surr: 4-Bromofluorobenzene	86.3	70-130		%REC	1	12/14/2012 4:50:52 PM
Surr: Dibromofluoromethane	98.0	70-130		%REC	1	12/14/2012 4:50:52 PM
Surr: Toluene-d8	90.7	70-130		%REC	1	12/14/2012 4:50:52 PM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	4300	0.010		µmhos/cm	1	12/7/2012 6:18:46 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



Analytical Report

Lab Order 1212363

Date Reported: 12/21/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-2

Project: Yates Lattion Pit

Collection Date: 12/6/2012 11:00:00 AM

Lab ID: 1212363-004

Matrix: AQUEOUS

Received Date: 12/7/2012 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: JML
pH	7.75	1.68	H	pH units	1	12/13/2012 1:28:31 PM
SM2320B: ALKALINITY						
						Analyst: JML
Bicarbonate (As CaCO3)	140	20		mg/L CaCO3	1	12/7/2012 6:18:46 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/7/2012 6:18:46 PM
Total Alkalinity (as CaCO3)	140	20		mg/L CaCO3	1	12/7/2012 6:18:46 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: JML
Total Dissolved Solids	3510	20.0		mg/L	1	12/13/2012 4:29:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2			
	1212363-01	1212363-02	1212363-03	1212363-04	1212363-05	1212363-06	1212363-07	1212363-08	1212363-09	1212363-10
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sodium	310	13.48	230	10.00	39	1.70	100	4.35		
Potassium	5.5	0.14	4.2	0.11	3.2	0.08	5	0.13		
Calcium	940	46.91	780	38.92	270	13.47	600	29.94		
Magnesium	370	30.45	320	26.34	110	9.05	200	16.46		
<b>Total Cations</b>		90.98		75.37		24.30		50.88		
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sulfate	2000	41.64	1800	37.48	1000	20.82	1200	24.98		
Chloride	1700	47.95	1200	33.85	45	1.27	890	25.11		
Bicarbonate (CaCO <sub>3</sub> )	170	3.40	160	3.20	180	3.60	140	2.80		
Carbonate (CaCO <sub>3</sub> )										
Phosphate (P)										
Nitrite (N)										
Nitrate (N)	1.0	0.05	1.1	0.06	-		4.5	0.32		
Fluoride					1.3	0.07	0.98	0.05		
Bromide					0.10	0.00				
<b>Total Anions</b>		93.05		74.58		25.76		53.26		
Elect. Cond. (µMhos/cm)	7000		5700		1800		4300			
CATION/ANION RATIO										
% Difference	0.98	1	1.01	1	0.94	3	0.96	2		
TOTAL DISSOLVED SOLIDS RATIOS										
TDS (measured)	5760		4550		1600		3510			
TDS (calculated)	5429		4431		1577		3100			
Ratio meas TDS:calc TDS		1.1		1.0		1.0		1.1		
Ratio Meas. TDS:EC		0.82		0.80		0.89		0.82		
Ratio Calc. TDS:EC		0.78		0.78		0.88		0.72		
Ratio of anion sum:EC		1.3		1.3		1.4		1.2		
Ratio of cation sum:EC		1.3		1.3		1.4		1.2		

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R7435	RunNo:	7435					
Prep Date:		Analysis Date:	12/11/2012	SeqNo:	215488	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R7435	RunNo:	7435					
Prep Date:		Analysis Date:	12/11/2012	SeqNo:	215489	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Calcium	51	1.0	50.00	0	102	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Magnesium	52	1.0	50.00	0	104	85	115			
Manganese	0.50	0.0020	0.5000	0	99.9	85	115			
Potassium	51	1.0	50.00	0	103	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Sodium	52	1.0	50.00	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R7459	RunNo:	7459					
Prep Date:		Analysis Date:	12/12/2012	SeqNo:	216090	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R7459	RunNo:	7459					
Prep Date:		Analysis Date:	12/12/2012	SeqNo:	216091	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.7	85	115			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2
- R

RPD outside accepted recovery limits

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R7491	RunNo:	7491					
Prep Date:		Analysis Date:	12/13/2012	SeqNo:	217062	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R7491	RunNo:	7491					
Prep Date:		Analysis Date:	12/13/2012	SeqNo:	217063	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.46	0.0060	0.5000	0	91.1	85	115			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2
- R

RPD outside accepted recovery limits



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1212363

21-Dec-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R7429</b>			RunNo: <b>7429</b>						
Prep Date:	Analysis Date: <b>12/11/2012</b>			SeqNo: <b>215282</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.028	0.0010	0.02500	0	111	85	115			
Lead	0.026	0.0010	0.02500	0	104	85	115			
Uranium	0.027	0.0010	0.02500	.00001042	107	85	115			

Sample ID <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R7429</b>			RunNo: <b>7429</b>						
Prep Date:	Analysis Date: <b>12/11/2012</b>			SeqNo: <b>215283</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	110	85	115			
Lead	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.028	0.0010	0.02500	0	113	85	115			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R7429</b>			RunNo: <b>7429</b>						
Prep Date:	Analysis Date: <b>12/11/2012</b>			SeqNo: <b>215284</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Uranium	ND	0.0010								

Sample ID <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R7429</b>			RunNo: <b>7429</b>						
Prep Date:	Analysis Date: <b>12/11/2012</b>			SeqNo: <b>215285</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Uranium	ND	0.0010								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R7464</b>			RunNo: <b>7464</b>						
Prep Date:	Analysis Date: <b>12/12/2012</b>			SeqNo: <b>216494</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	100	85	115			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 P Sample pH greater than 2

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 R RPD outside accepted recovery limits

## QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363

21-Dec-12

Client: Safety &amp; Environmental Solutions

Project: Yates Lattion Pit

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R7464		RunNo: 7464					
Prep Date:			Analysis Date: 12/12/2012		SeqNo: 216496		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R7464		RunNo:	7464				
Prep Date:		Analysis Date:	12/12/2012		SeqNo:	216498		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R7464		RunNo:	7464				
Prep Date:		Analysis Date:	12/12/2012		SeqNo:	216499		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R7543		RunNo: 7543					
Prep Date:			Analysis Date: 12/17/2012		SeqNo: 218897		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	102	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R7543		RunNo: 7543					
Prep Date:			Analysis Date: 12/17/2012		SeqNo: 218898		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	97.8	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R7543		RunNo: 7543					
Prep Date:			Analysis Date: 12/17/2012		SeqNo: 218899		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	98.7	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R7543			RunNo: 7543					
Prep Date:		Analysis Date: 12/17/2012			SeqNo: 218900		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R7543		RunNo:	7543					
Prep Date:		Analysis Date:	12/17/2012		SeqNo:	218901		Units:	mg/L		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium		ND	0.0010								

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R7543		RunNo:	7543					
Prep Date:		Analysis Date:	12/17/2012		SeqNo:	218902		Units:	mg/L		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium		ND	0.0010								

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB-5193	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	5193	RunNo:	7439					
Prep Date:	12/10/2012	Analysis Date:	12/11/2012	SeqNo:	215580	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-5193	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	5193	RunNo:	7439					
Prep Date:	12/10/2012	Analysis Date:	12/11/2012	SeqNo:	215581	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.3	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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## QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363

21-Dec-12

Client: Safety &amp; Environmental Solutions

Project: Yates Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R7388	RunNo:	7388					
Prep Date:		Analysis Date:	12/7/2012	SeqNo:	213960	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R7388	RunNo:	7388					
Prep Date:		Analysis Date:	12/7/2012	SeqNo:	213961	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.4	90	110			
Chloride	4.9	0.50	5.000	0	97.3	90	110			
Nitrogen, Nitrite (As N)	0.93	0.10	1.000	0	92.9	90	110			
Bromide	2.5	0.10	2.500	0	99.3	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	5.1	0.50	5.000	0	103	90	110			
Sulfate	9.7	0.50	10.00	0	97.3	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R7388	RunNo:	7388					
Prep Date:		Analysis Date:	12/8/2012	SeqNo:	214014	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R7388	RunNo:	7388					
Prep Date:		Analysis Date:	12/8/2012	SeqNo:	214015	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.5	90	110			
Chloride	4.9	0.50	5.000	0	98.3	90	110			
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	93.9	90	110			

## Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
P Sample pH greater than 2	R RPD outside accepted recovery limits

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1212363

21-Dec-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID	<b>LCS</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSW</b>		Batch ID: <b>R7388</b>		RunNo: <b>7388</b>					
Prep Date:			Analysis Date: <b>12/8/2012</b>		SeqNo: <b>214015</b>		Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.5	0.10	2.500	0	99.0	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P	5.2	0.50	5.000	0	103	90	110			
Sulfate	9.8	0.50	10.00	0	98.1	90	110			

Sample ID	<b>MB</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBW</b>		Batch ID: <b>R7419</b>		RunNo: <b>7419</b>					
Prep Date:			Analysis Date: <b>12/10/2012</b>		SeqNo: <b>215025</b>		Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	<b>LCS</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSW</b>		Batch ID: <b>R7419</b>		RunNo: <b>7419</b>					
Prep Date:			Analysis Date: <b>12/10/2012</b>		SeqNo: <b>215026</b>		Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Sulfate	9.4	0.50	10.00	0	94.1	90	110			

Sample ID	<b>MB</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBW</b>		Batch ID: <b>R7462</b>		RunNo: <b>7462</b>					
Prep Date:			Analysis Date: <b>12/12/2012</b>		SeqNo: <b>216326</b>		Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	<b>LCS</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSW</b>		Batch ID: <b>R7462</b>		RunNo: <b>7462</b>					
Prep Date:			Analysis Date: <b>12/12/2012</b>		SeqNo: <b>216327</b>		Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.7	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH greater than 2

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1212363

21-Dec-12

**Client:** Safety & Environmental Solutions**Project:** Yates Lattion Pit

Sample ID <b>5mL rb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R7514</b>		RunNo: <b>7514</b>							
Prep Date:	Analysis Date: <b>12/14/2012</b>		SeqNo: <b>218224</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.5	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID <b>100ng lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R7514</b>		RunNo: <b>7514</b>							
Prep Date:	Analysis Date: <b>12/14/2012</b>		SeqNo: <b>218225</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	20	1.0	20.00	0	100	80	120			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.6	70	130			
Surr: Toluene-d8	9.1		10.00		91.3	70	130			

Sample ID <b>1212363-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>MW-1</b>	Batch ID: <b>R7514</b>		RunNo: <b>7514</b>							
Prep Date:	Analysis Date: <b>12/14/2012</b>		SeqNo: <b>218227</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	66.8	128			
Toluene	20	1.0	20.00	0	98.2	70	130			
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.5	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		91.7	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.8	70	130			
Surr: Toluene-d8	9.1		10.00		91.2	70	130			

Sample ID <b>1212363-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>MW-1</b>	Batch ID: <b>R7514</b>		RunNo: <b>7514</b>							
Prep Date:	Analysis Date: <b>12/14/2012</b>		SeqNo: <b>218228</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	66.8	128	2.78	16.7	
Toluene	20	1.0	20.00	0	100	70	130	2.25	18.7	
Surr: 1,2-Dichloroethane-d4	8.6		10.00		85.5	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	1212363-001amsd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-1	Batch ID:	R7514	RunNo:	7514					
Prep Date:		Analysis Date:	12/14/2012	SeqNo:	218228	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.1		10.00		91.3	70	130	0	0	
Surr: Dibromofluoromethane	9.1		10.00		91.0	70	130	0	0	
Surr: Toluene-d8	9.6		10.00		96.3	70	130	0	0	

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	1212363-003b dup	SampType:	DUP	TestCode:	EPA 120.1: Specific Conductance					
Client ID:	MW-3	Batch ID:	R7390	RunNo:	7390					
Prep Date:		Analysis Date:	12/7/2012	SeqNo:	214206	Units:	µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	1900	0.010						0.432	20	

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363

21-Dec-12

Client: Safety &amp; Environmental Solutions

Project: Yates Lattion Pit

Sample ID	<b>mb-1</b>	SampType:	<b>MBLK</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>R7390</b>	RunNo:	<b>7390</b>					
Prep Date:		Analysis Date:	<b>12/7/2012</b>	SeqNo:	<b>214124</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	<b>lcs-1</b>	SampType:	<b>LCS</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>R7390</b>	RunNo:	<b>7390</b>					
Prep Date:		Analysis Date:	<b>12/7/2012</b>	SeqNo:	<b>214125</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	0	102	88.1	104			

Sample ID	<b>mb-2</b>	SampType:	<b>MBLK</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>R7390</b>	RunNo:	<b>7390</b>					
Prep Date:		Analysis Date:	<b>12/7/2012</b>	SeqNo:	<b>214146</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	<b>lcs-2</b>	SampType:	<b>LCS</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>R7390</b>	RunNo:	<b>7390</b>					
Prep Date:		Analysis Date:	<b>12/7/2012</b>	SeqNo:	<b>214147</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	0	102	88.1	104			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212363  
21-Dec-12

Client: Safety & Environmental Solutions  
Project: Yates Lattion Pit

Sample ID	MB-5234	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	5234	RunNo:	7484					
Prep Date:	12/12/2012	Analysis Date:	12/13/2012	SeqNo:	216959	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-5234	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	5234	RunNo:	7484					
Prep Date:	12/12/2012	Analysis Date:	12/13/2012	SeqNo:	216960	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

Page 21 of 21



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4101  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name:	Safety Env Solutions	Work Order Number:	1212363
Received by/date:	MS 12/07/12		
Logged By:	Lindsay Mangin	12/7/2012 10:45:00 AM	<i>Lindsay Mangin</i>
Completed By:	Lindsay Mangin	12/7/2012 12:23:14 PM	<i>Lindsay Mangin</i>
Reviewed By:	IO 12/07/2012		

**Chain of Custody**

- Were seals intact? Yes ☐ No ☐ Not Present ☒
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? FedEx

**Log In**

- Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
- Was preservative added to bottles? Yes ☐ No ☒ NA ☐
- VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH:	12
Adjusted?	( $<2$ or $>12$ unless noted)
Checked by:	<i>mg</i>

**Special Handling (if applicable)**

- Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

- Additional remarks:

**19. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

March 29, 2013

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 390-7067  
FAX (575) 393-4388

RE: Lattion Pit

OrderNo.: 1303564

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/14/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 3/12/2013 9:45:00 AM

Lab ID: 1303564-001

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.9	0.10		mg/L	1	3/16/2013 12:20:25 AM
Chloride	1500	50		mg/L	100	3/19/2013 5:29:22 AM
Bromide	2.3	2.0		mg/L	20	3/16/2013 12:32:49 AM
Nitrate+Nitrite as N	ND	2.0		mg/L	10	3/22/2013 10:17:21 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/19/2013 5:16:57 AM
Sulfate	1800	50		mg/L	100	3/19/2013 5:29:22 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.019	0.0020		mg/L	1	3/21/2013 3:18:58 PM
Cadmium	ND	0.0020		mg/L	1	3/21/2013 3:18:58 PM
Calcium	820	10		mg/L	10	3/21/2013 3:20:59 PM
Chromium	ND	0.0060		mg/L	1	3/21/2013 3:18:58 PM
Copper	ND	0.0060		mg/L	1	3/21/2013 3:18:58 PM
Iron	0.20	0.020		mg/L	1	3/21/2013 3:18:58 PM
Lead	ND	0.0050		mg/L	1	3/21/2013 3:18:58 PM
Magnesium	300	10		mg/L	10	3/21/2013 3:20:59 PM
Manganese	0.33	0.0020	*	mg/L	1	3/21/2013 3:18:58 PM
Potassium	4.3	1.0		mg/L	1	3/21/2013 3:18:58 PM
Silver	ND	0.0050		mg/L	1	3/21/2013 3:18:58 PM
Sodium	230	10		mg/L	10	3/25/2013 4:22:54 PM
Zinc	ND	0.010		mg/L	1	3/21/2013 3:18:58 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0025	0.0010		mg/L	1	3/18/2013 12:18:33 PM
Selenium	0.0045	0.0010		mg/L	1	3/18/2013 12:18:33 PM
Uranium	0.0027	0.0010		mg/L	1	3/18/2013 12:18:33 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	3/22/2013 8:50:15 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/20/2013 2:00:02 AM
Toluene	ND	1.0		µg/L	1	3/20/2013 2:00:02 AM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2013 2:00:02 AM
Naphthalene	ND	2.0		µg/L	1	3/20/2013 2:00:02 AM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2013 2:00:02 AM
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	3/20/2013 2:00:02 AM
Surr: 4-Bromofluorobenzene	89.6	69.5-130		%REC	1	3/20/2013 2:00:02 AM
Surr: Dibromofluoromethane	92.8	70-130		%REC	1	3/20/2013 2:00:02 AM
Surr: Toluene-d8	86.9	70-130		%REC	1	3/20/2013 2:00:02 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	6500	0.010		µmhos/cm	1	3/14/2013 10:24:18 PM
<b>SM4500-H+B: PH</b>						Analyst: JML

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 3/12/2013 9:45:00 AM

Lab ID: 1303564-001

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: JML
pH	7.38	1.68	H	pH units	1	3/14/2013 10:24:18 PM
SM2320B: ALKALINITY						
						Analyst: JML
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	3/14/2013 10:24:18 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	3/14/2013 10:24:18 PM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	3/14/2013 10:24:18 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: KS
Total Dissolved Solids	5380	200	*	mg/L	1	3/18/2013 9:14:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 3/12/2013 10:25:00 AM

Lab ID: 1303564-002

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.9	0.10		mg/L	1	3/16/2013 12:45:13 AM
Chloride	1100	50		mg/L	100	3/19/2013 5:54:11 AM
Bromide	1.5	0.10		mg/L	1	3/16/2013 12:45:13 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/16/2013 1:59:40 AM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/19/2013 5:41:47 AM
Sulfate	1700	50		mg/L	100	3/19/2013 5:54:11 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.013	0.0020		mg/L	1	3/21/2013 3:25:27 PM
Cadmium	ND	0.0020		mg/L	1	3/21/2013 3:25:27 PM
Calcium	710	10		mg/L	10	3/21/2013 3:27:51 PM
Chromium	ND	0.0060		mg/L	1	3/21/2013 3:25:27 PM
Copper	ND	0.0060		mg/L	1	3/21/2013 3:25:27 PM
Iron	0.089	0.020		mg/L	1	3/21/2013 3:25:27 PM
Lead	ND	0.0050		mg/L	1	3/21/2013 3:25:27 PM
Magnesium	280	10		mg/L	10	3/21/2013 3:27:51 PM
Manganese	0.049	0.0020		mg/L	1	3/21/2013 3:25:27 PM
Potassium	3.7	1.0		mg/L	1	3/21/2013 3:25:27 PM
Silver	ND	0.0050		mg/L	1	3/21/2013 3:25:27 PM
Sodium	180	10		mg/L	10	3/25/2013 4:24:11 PM
Zinc	0.038	0.010		mg/L	1	3/21/2013 3:25:27 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0012	0.0010		mg/L	1	3/18/2013 12:24:10 PM
Selenium	0.0036	0.0010		mg/L	1	3/18/2013 12:24:10 PM
Uranium	0.0028	0.0010		mg/L	1	3/18/2013 12:24:10 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	3/22/2013 8:55:34 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/20/2013 2:32:18 AM
Toluene	ND	1.0		µg/L	1	3/20/2013 2:32:18 AM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2013 2:32:18 AM
Naphthalene	ND	2.0		µg/L	1	3/20/2013 2:32:18 AM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2013 2:32:18 AM
Surr: 1,2-Dichloroethane-d4	98.9	70-130		%REC	1	3/20/2013 2:32:18 AM
Surr: 4-Bromofluorobenzene	82.2	69.5-130		%REC	1	3/20/2013 2:32:18 AM
Surr: Dibromofluoromethane	89.7	70-130		%REC	1	3/20/2013 2:32:18 AM
Surr: Toluene-d8	84.6	70-130		%REC	1	3/20/2013 2:32:18 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	5600	0.010		µmhos/cm	1	3/14/2013 10:34:52 PM
<b>SM4500-H+B: PH</b>						Analyst: JML

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 3/12/2013 10:25:00 AM

Lab ID: 1303564-002

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						
						Analyst: JML
pH	7.46	1.68	H	pH units	1	3/14/2013 10:34:52 PM
SM2320B: ALKALINITY						
						Analyst: JML
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	3/14/2013 10:34:52 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	3/14/2013 10:34:52 PM
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	3/14/2013 10:34:52 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
						Analyst: KS
Total Dissolved Solids	4450	100	*	mg/L	1	3/18/2013 9:14:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 3/12/2013 10:45:00 AM

Lab ID: 1303564-003

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.4	0.10		mg/L	1	3/16/2013 1:10:03 AM
Chloride	43	10		mg/L	20	3/16/2013 1:22:27 AM
Bromide	0.12	0.10		mg/L	1	3/16/2013 1:10:03 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/16/2013 2:49:19 AM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/19/2013 6:06:35 AM
Sulfate	960	10		mg/L	20	3/16/2013 1:22:27 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.018	0.0020		mg/L	1	3/21/2013 3:32:20 PM
Cadmium	ND	0.0020		mg/L	1	3/21/2013 3:32:20 PM
Calcium	240	10		mg/L	10	3/21/2013 3:44:40 PM
Chromium	ND	0.0060		mg/L	1	3/21/2013 3:32:20 PM
Copper	ND	0.0060		mg/L	1	3/21/2013 3:32:20 PM
Iron	0.22	0.020		mg/L	1	3/21/2013 3:32:20 PM
Lead	0.0064	0.0050		mg/L	1	3/21/2013 3:32:20 PM
Magnesium	92	1.0		mg/L	1	3/21/2013 3:32:20 PM
Manganese	0.060	0.0020	*	mg/L	1	3/21/2013 3:32:20 PM
Potassium	2.4	1.0		mg/L	1	3/21/2013 3:32:20 PM
Silver	ND	0.0050		mg/L	1	3/21/2013 3:32:20 PM
Sodium	34	1.0		mg/L	1	3/25/2013 4:25:27 PM
Zinc	ND	0.010		mg/L	1	3/21/2013 3:32:20 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	3/18/2013 12:27:56 PM
Selenium	ND	0.0010		mg/L	1	3/18/2013 12:27:56 PM
Uranium	ND	0.0010		mg/L	1	3/18/2013 12:27:56 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	3/22/2013 8:57:22 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/20/2013 3:04:33 AM
Toluene	ND	1.0		µg/L	1	3/20/2013 3:04:33 AM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2013 3:04:33 AM
Naphthalene	ND	2.0		µg/L	1	3/20/2013 3:04:33 AM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2013 3:04:33 AM
Surr: 1,2-Dichloroethane-d4	93.6	70-130		%REC	1	3/20/2013 3:04:33 AM
Surr: 4-Bromofluorobenzene	90.5	69.5-130		%REC	1	3/20/2013 3:04:33 AM
Surr: Dibromofluoromethane	84.2	70-130		%REC	1	3/20/2013 3:04:33 AM
Surr: Toluene-d8	90.3	70-130		%REC	1	3/20/2013 3:04:33 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	1900	0.010		µmhos/cm	1	3/14/2013 10:45:40 PM
<b>SM4500-H+B: PH</b>						Analyst: JML

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 3/12/2013 10:45:00 AM

Lab ID: 1303564-003

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>SM4500-H+B: PH</b>						Analyst: JML
pH	7.70	1.68	H	pH units	1	3/14/2013 10:45:40 PM
<b>SM2320B: ALKALINITY</b>						Analyst: JML
Bicarbonate (As CaCO3)	190	20		mg/L CaCO3	1	3/14/2013 10:45:40 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	3/14/2013 10:45:40 PM
Total Alkalinity (as CaCO3)	190	20		mg/L CaCO3	1	3/14/2013 10:45:40 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	1620	20.0	*	mg/L	1	3/18/2013 9:14:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



## Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 3/12/2013 11:00:00 AM

Lab ID: 1303564-004

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	0.62	0.10		mg/L	1	3/16/2013 1:34:52 AM
Chloride	880	25		mg/L	50	3/19/2013 6:56:14 AM
Bromide	1.2	0.10		mg/L	1	3/16/2013 1:34:52 AM
Nitrate+Nitrite as N	2.8	1.0		mg/L	5	3/16/2013 3:01:44 AM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/19/2013 6:19:00 AM
Sulfate	1200	25		mg/L	50	3/19/2013 6:56:14 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JLF
Barium	0.012	0.0020		mg/L	1	3/21/2013 3:49:04 PM
Cadmium	ND	0.0020		mg/L	1	3/21/2013 3:49:04 PM
Calcium	560	10		mg/L	10	3/21/2013 3:51:29 PM
Chromium	ND	0.0060		mg/L	1	3/21/2013 3:49:04 PM
Copper	ND	0.0060		mg/L	1	3/21/2013 3:49:04 PM
Iron	0.023	0.020		mg/L	1	3/21/2013 3:49:04 PM
Lead	0.0060	0.0050		mg/L	1	3/21/2013 3:49:04 PM
Magnesium	180	10		mg/L	10	3/21/2013 3:51:29 PM
Manganese	0.0021	0.0020		mg/L	1	3/21/2013 3:49:04 PM
Potassium	4.6	1.0		mg/L	1	3/21/2013 3:49:04 PM
Silver	ND	0.0050		mg/L	1	3/21/2013 3:49:04 PM
Sodium	92	1.0		mg/L	1	3/25/2013 4:37:38 PM
Zinc	ND	0.010		mg/L	1	3/21/2013 3:49:04 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: DBD
Arsenic	0.0017	0.0010		mg/L	1	3/18/2013 12:39:14 PM
Selenium	0.026	0.0010		mg/L	1	3/18/2013 12:39:14 PM
Uranium	0.0068	0.0010		mg/L	1	3/18/2013 12:39:14 PM
<b>EPA METHOD 245.1: MERCURY</b>						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	3/22/2013 8:59:09 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/20/2013 3:36:49 AM
Toluene	ND	1.0		µg/L	1	3/20/2013 3:36:49 AM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2013 3:36:49 AM
Naphthalene	ND	2.0		µg/L	1	3/20/2013 3:36:49 AM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2013 3:36:49 AM
Surr: 1,2-Dichloroethane-d4	94.8	70-130		%REC	1	3/20/2013 3:36:49 AM
Surr: 4-Bromofluorobenzene	85.9	69.5-130		%REC	1	3/20/2013 3:36:49 AM
Surr: Dibromofluoromethane	86.2	70-130		%REC	1	3/20/2013 3:36:49 AM
Surr: Toluene-d8	88.6	70-130		%REC	1	3/20/2013 3:36:49 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	4200	0.010		µmhos/cm	1	3/14/2013 10:56:22 PM
<b>SM4500-H+B: PH</b>						Analyst: JML

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 3/12/2013 11:00:00 AM

Lab ID: 1303564-004

Matrix: AQUEOUS

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM4500-H+B: PH						Analyst: JML
pH	7.48	1.68	H	pH units	1	3/14/2013 10:56:22 PM
SM2320B: ALKALINITY						Analyst: JML
Bicarbonate (As CaCO3)	150	20		mg/L CaCO3	1	3/14/2013 10:56:22 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	3/14/2013 10:56:22 PM
Total Alkalinity (as CaCO3)	150	20		mg/L CaCO3	1	3/14/2013 10:56:22 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	3360	40.0	*	mg/L	1	3/18/2013 9:14:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Analytical Report

Lab Order 1303564

Date Reported: 3/29/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: Trip Blank

Project: Lattion Pit

Collection Date:

Lab ID: 1303564-005

Matrix: TRIP BLANK

Received Date: 3/14/2013 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/20/2013 4:09:05 AM
Toluene	ND	1.0		µg/L	1	3/20/2013 4:09:05 AM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2013 4:09:05 AM
Naphthalene	ND	2.0		µg/L	1	3/20/2013 4:09:05 AM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2013 4:09:05 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	3/20/2013 4:09:05 AM
Surr: 4-Bromofluorobenzene	88.5	69.5-130		%REC	1	3/20/2013 4:09:05 AM
Surr: Dibromofluoromethane	90.0	70-130		%REC	1	3/20/2013 4:09:05 AM
Surr: Toluene-d8	94.4	70-130		%REC	1	3/20/2013 4:09:05 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	P	Sample pH greater than 2	R	RPD outside accepted recovery limits
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2	
CATIONS	1303564-01	1303564-02	1303564-03	1303564-04	1303564-03	1303564-04	1303564-03	1303564-04
Sodium	mg/L 230	10.00	mg/L 180	7.83	mg/L 34	1.48	mg/L 92	4.00
Potassium	4.3	0.11	3.7	0.09	2.4	0.06	4.6	0.12
Calcium	820	40.92	710	35.43	240	11.98	560	27.94
Magnesium	300	24.69	280	23.05	92	7.57	180	14.81
Total Cations	75.72	66.40	21.09	46.88				
ANIONS	mg/L 1800	37.48	mg/L 1700	35.39	mg/L 960	19.99	mg/L 1200	24.98
Sulfate	1500	42.31	1100	31.03	43	1.21	880	24.82
Chloride	160	3.20	160	3.20	190	3.80	150	3.00
Bicarbonate (CaCO3)								
Carbonate (CaCO3)								
Phosphate (P)								
Nitrite (N)								
Nitrate (N)	1.9	0.10	1.9	0.10	1.4	0.07	2.8	0.20
Fluoride	2.3	0.03	1.50	0.02	0.12	0.00	0.62	0.03
Bromide							1.2	0.02
Total Anions	83.12	69.74	25.07	53.05				
Elect. Cond. (µMhos/cm)	6500	5600	1900	4200				
CATION/ANION RATIO	0.91	0.95	0.84	0.88				
% Difference	5	2	9	6				
TOTAL DISSOLVED SOLIDS RATIOS								
TDS (measured)	5380	4450	1620	3360				
TDS (calculated)	4755	4073	1487	3021				
Ratio meas TDS:calc TDS	1.1	1.1	1.1	1.1				
Ratio Meas. TDS:EC	0.83	0.79	0.85	0.80				
Ratio Calc. TDS:EC	0.73	0.73	0.78	0.72				
Ratio of anion sum:EC	1.3	1.2	1.3	1.3				
Ratio of cation sum:EC	1.2	1.2	1.1	1.1				

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

GENERALLY ACCEPTED RANGES

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, >10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564  
29-Mar-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R9340	RunNo:	9340					
Prep Date:	2/22/2013	Analysis Date:	3/21/2013	SeqNo:	266289	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R9340	RunNo:	9340					
Prep Date:		Analysis Date:	3/21/2013	SeqNo:	266290	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Calcium	49	1.0	50.00	0	97.8	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Copper	0.48	0.0060	0.5000	0	95.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Lead	0.51	0.0050	0.5000	0	102	85	115			
Magnesium	48	1.0	50.00	0	95.4	85	115			
Manganese	0.50	0.0020	0.5000	0	99.9	85	115			
Potassium	47	1.0	50.00	0	93.8	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R9400	RunNo:	9400					
Prep Date:	2/22/2013	Analysis Date:	3/25/2013	SeqNo:	268365	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH greater than 2
- RL

Reporting Detection Limit
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- R

RPD outside accepted recovery limits
- S

Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564

29-Mar-13

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R9400	RunNo:	9400					
Prep Date:		Analysis Date:	3/25/2013	SeqNo:	268366	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	50	1.0	50.00	0	99.7	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Page 11 of 18



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564

29-Mar-13

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID	LCS			SampType: LCS		TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW			Batch ID: R9252		RunNo: 9252				
Prep Date:				Analysis Date: 3/18/2013		SeqNo: 263477		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			
Selenium	0.024	0.0010	0.02500	0	94.2	85	115			
Uranium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID	LCS			SampType: LCS	TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW			Batch ID: R9252	RunNo: 9252					
Prep Date:				Analysis Date: 3/18/2013	SeqNo: 263478		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.2	85	115			
Selenium	0.024	0.0010	0.02500	0	95.4	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R9252			RunNo: 9252					
Prep Date:		Analysis Date: 3/18/2013			SeqNo: 263479		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R9252			RunNo: 9252					
Prep Date:		Analysis Date: 3/18/2013			SeqNo: 263480		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

### Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
P Sample pH greater than 2	R RPD outside accepted recovery limits
RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564  
29-Mar-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-6598	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	6598	RunNo:	9354					
Prep Date:	3/21/2013	Analysis Date:	3/22/2013	SeqNo:	266705	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-6598	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	6598	RunNo:	9354					
Prep Date:	3/21/2013	Analysis Date:	3/22/2013	SeqNo:	266706	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	95.0	80	120			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH greater than 2
- RL

Reporting Detection Limit
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- R

RPD outside accepted recovery limits
- S

Spike Recovery outside accepted recovery limits



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1303564

29-Mar-13

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R9237</b>		RunNo: <b>9237</b>							
Prep Date:	Analysis Date: <b>3/15/2013</b>		SeqNo: <b>262772</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R9237</b>		RunNo: <b>9237</b>							
Prep Date:	Analysis Date: <b>3/15/2013</b>		SeqNo: <b>262773</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.3	90	110			
Chloride	4.6	0.50	5.000	0	91.8	90	110			
Bromide	2.3	0.10	2.500	0	93.7	90	110			
Sulfate	9.3	0.50	10.00	0	92.7	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	94.6	90	110			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R9261</b>		RunNo: <b>9261</b>							
Prep Date:	Analysis Date: <b>3/18/2013</b>		SeqNo: <b>263964</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R9261</b>		RunNo: <b>9261</b>							
Prep Date:	Analysis Date: <b>3/18/2013</b>		SeqNo: <b>263965</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.5	90	110			
Phosphorus, Orthophosphate (As P	5.2	0.50	5.000	0	104	90	110			
Sulfate	9.9	0.50	10.00	0	99.0	90	110			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R9382</b>		RunNo: <b>9382</b>							
Prep Date:	Analysis Date: <b>3/22/2013</b>		SeqNo: <b>267764</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

**Qualifiers:**

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
P Sample pH greater than 2	R RPD outside accepted recovery limits
RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564  
29-Mar-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R9382	RunNo:	9382					
Prep Date:		Analysis Date:	3/22/2013	SeqNo:	267765	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.7	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R9382	RunNo:	9382					
Prep Date:		Analysis Date:	3/23/2013	SeqNo:	267849	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R9382	RunNo:	9382					
Prep Date:		Analysis Date:	3/23/2013	SeqNo:	267850	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	96.6	90	110			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH greater than 2
- RL

Reporting Detection Limit
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- R

RPD outside accepted recovery limits
- S

Spike Recovery outside accepted recovery limits



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564  
29-Mar-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R9277	RunNo:	9277					
Prep Date:		Analysis Date:	3/19/2013	SeqNo:	264439	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		86.3	69.5	130			
Surr: Dibromofluoromethane	9.2		10.00		92.2	70	130			
Surr: Toluene-d8	9.5		10.00		95.4	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R9277	RunNo:	9277					
Prep Date:		Analysis Date:	3/19/2013	SeqNo:	264440	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Toluene	20	1.0	20.00	0	99.3	80	120			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	8.9		10.00		88.6	69.5	130			
Surr: Dibromofluoromethane	9.3		10.00		93.2	70	130			
Surr: Toluene-d8	9.8		10.00		97.6	70	130			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- H

Holding times for preparation or analysis exceeded
- J

Analyte detected below quantitation limits
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2
- R

RPD outside accepted recovery limits
- RL

Reporting Detection Limit
- S

Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564

29-Mar-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	mb-1	SampType:	mblk	TestCode:	SM2320B: Alkalinity						
Client ID:	PBW	Batch ID:	R9204	RunNo:	9204						
Prep Date:		Analysis Date:	3/14/2013	SeqNo:	261658	Units:	mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20									

Sample ID	ics-1	SampType:	ics	TestCode:	SM2320B: Alkalinity						
Client ID:	LCSW	Batch ID:	R9204	RunNo:	9204						
Prep Date:		Analysis Date:	3/14/2013	SeqNo:	261659	Units:	mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.8	90	110				

Sample ID	mb-2	SampType:	mblk	TestCode:	SM2320B: Alkalinity						
Client ID:	PBW	Batch ID:	R9204	RunNo:	9204						
Prep Date:		Analysis Date:	3/14/2013	SeqNo:	261682	Units:	mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20									

Sample ID	ics-2	SampType:	ics	TestCode:	SM2320B: Alkalinity						
Client ID:	LCSW	Batch ID:	R9204	RunNo:	9204						
Prep Date:		Analysis Date:	3/14/2013	SeqNo:	261683	Units:	mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.6	90	110				

Sample ID	mb-3	SampType:	mblk	TestCode:	SM2320B: Alkalinity						
Client ID:	PBW	Batch ID:	R9204	RunNo:	9204						
Prep Date:		Analysis Date:	3/14/2013	SeqNo:	261702	Units:	mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20									

Sample ID	ics-3	SampType:	ics	TestCode:	SM2320B: Alkalinity						
Client ID:	LCSW	Batch ID:	R9204	RunNo:	9204						
Prep Date:		Analysis Date:	3/14/2013	SeqNo:	261703	Units:	mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	79	20	80.00	0	99.0	90	110				

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303564  
29-Mar-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-6519	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	6519	RunNo:	9232					
Prep Date:	3/16/2013	Analysis Date:	3/18/2013	SeqNo:	262642	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-6519	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	6519	RunNo:	9232					
Prep Date:	3/16/2013	Analysis Date:	3/18/2013	SeqNo:	262643	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1040	20.0	1000	17.00	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 18 of 18
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
P	Sample pH greater than 2	R	RPD outside accepted recovery limits	
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits	



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Safety Env Solutions Work Order Number: 1303564  
Received by/date: CM 03/14/13  
Logged By: Anne Thorne 3/14/2013 9:30:00 AM *Am Thorne*  
Completed By: Anne Thorne 3/14/2013 *Am Thorne*  
Reviewed By: *mg* 03/14/13

**Chain of Custody**

1. Were seals intact? Yes ☒ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered?

**Log In**

4. Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 12  
(2 or >12 unless noted)  
Adjusted? NO  
Checked by: *[Signature]*

**Special Handling (if applicable)**

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

18. Additional remarks:

**19. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

July 18, 2013

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 390-7067  
FAX (575) 393-4388

RE: Lattion Pit

OrderNo.: 1306C10

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/28/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 6/27/2013 7:40:00 AM

Lab ID: 1306C10-001

Matrix: AQUEOUS

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Fluoride	1.3	0.50		mg/L	5	7/17/2013 4:09:22 AM	R11991
Chloride	1400	50		mg/L	100	7/2/2013 2:01:20 AM	R11696
Bromide	2.1	0.10		mg/L	1	6/28/2013 3:06:54 PM	R11671
Nitrate+Nitrite as N	ND	1.0		mg/L	5	7/2/2013 4:17:51 AM	R11696
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/28/2013 3:06:54 PM	R11671
Sulfate	1600	50		mg/L	100	7/2/2013 2:01:20 AM	R11696
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: JLF
Barium	0.018	0.0020		mg/L	1	7/9/2013 4:28:41 PM	R11805
Cadmium	ND	0.0020		mg/L	1	7/9/2013 4:28:41 PM	R11805
Calcium	910	10		mg/L	10	7/10/2013 4:37:55 PM	R11837
Chromium	ND	0.0060		mg/L	1	7/9/2013 4:28:41 PM	R11805
Copper	ND	0.0060		mg/L	1	7/9/2013 4:28:41 PM	R11805
Iron	0.031	0.020		mg/L	1	7/9/2013 4:28:41 PM	R11805
Lead	ND	0.0050		mg/L	1	7/10/2013 4:35:20 PM	R11837
Magnesium	300	5.0		mg/L	5	7/9/2013 4:31:17 PM	R11805
Manganese	0.16	0.0020	*	mg/L	1	7/9/2013 4:28:41 PM	R11805
Potassium	4.9	1.0		mg/L	1	7/9/2013 4:28:41 PM	R11805
Silver	ND	0.050		mg/L	10	7/10/2013 4:37:55 PM	R11837
Sodium	200	5.0		mg/L	5	7/9/2013 4:31:17 PM	R11805
Zinc	0.021	0.010		mg/L	1	7/9/2013 4:28:41 PM	R11805
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: DBD
Arsenic	0.0063	0.0010		mg/L	1	7/5/2013 11:57:21 AM	R11758
Selenium	0.022	0.0010		mg/L	1	7/5/2013 11:57:21 AM	R11758
Uranium	ND	0.0050		mg/L	5	7/9/2013 3:20:55 PM	R11818
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: IDC
Mercury	ND	0.00020		mg/L	1	7/2/2013 10:36:09 AM	8190
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: DAM
Benzene	ND	1.0		µg/L	1	7/2/2013 5:52:21 PM	R11708
Toluene	ND	1.0		µg/L	1	7/2/2013 5:52:21 PM	R11708
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 5:52:21 PM	R11708
Naphthalene	ND	2.0		µg/L	1	7/2/2013 5:52:21 PM	R11708
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 5:52:21 PM	R11708
Surr: 1,2-Dichloroethane-d4	88.9	70-130		%REC	1	7/2/2013 5:52:21 PM	R11708
Surr: 4-Bromofluorobenzene	96.4	70-130		%REC	1	7/2/2013 5:52:21 PM	R11708
Surr: Dibromofluoromethane	89.7	70-130		%REC	1	7/2/2013 5:52:21 PM	R11708
Surr: Toluene-d8	96.3	70-130		%REC	1	7/2/2013 5:52:21 PM	R11708
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JML
Conductivity	6800	0.010		µmhos/cm	1	6/28/2013 4:40:25 PM	R11669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Page 1 of 19

**CLIENT:** Safety & Environmental Solutions  
**Project:** Lattion Pit  
**Lab ID:** 1306C10-001

**Client Sample ID:** MW-1  
**Collection Date:** 6/27/2013 7:40:00 AM  
**Received Date:** 6/28/2013 9:50:00 AM

**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>SM4500-H+B: PH</b>							Analyst: <b>JML</b>
pH	7.28	1.68	H	pH units	1	6/28/2013 4:40:25 PM	R11669
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JML</b>
Bicarbonate (As CaCO3)	140	20		mg/L CaCO3	1	6/28/2013 4:40:25 PM	R11669
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/28/2013 4:40:25 PM	R11669
Total Alkalinity (as CaCO3)	140	20		mg/L CaCO3	1	6/28/2013 4:40:25 PM	R11669
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	5330	40.0	*	mg/L	1	7/2/2013 5:02:00 PM	8177

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



## Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 6/27/2013 8:20:00 AM

Lab ID: 1306C10-002

Matrix: AQUEOUS

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Fluoride	1.2	0.50		mg/L	5	7/17/2013 4:21:46 AM	R11991
Chloride	1000	50		mg/L	100	7/2/2013 2:13:45 AM	R11696
Bromide	1.7	0.10		mg/L	1	6/28/2013 3:31:43 PM	R11671
Nitrate+Nitrite as N	ND	1.0		mg/L	5	7/2/2013 4:30:15 AM	R11696
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/28/2013 3:31:43 PM	R11671
Sulfate	1600	50		mg/L	100	7/2/2013 2:13:45 AM	R11696
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: JLF
Barium	0.014	0.0020		mg/L	1	7/9/2013 4:33:55 PM	R11805
Cadmium	ND	0.0020		mg/L	1	7/9/2013 4:33:55 PM	R11805
Calcium	750	10		mg/L	10	7/10/2013 4:52:17 PM	R11837
Chromium	ND	0.0060		mg/L	1	7/9/2013 4:33:55 PM	R11805
Copper	ND	0.0060		mg/L	1	7/9/2013 4:33:55 PM	R11805
Iron	0.27	0.020		mg/L	1	7/9/2013 4:33:55 PM	R11805
Lead	ND	0.0050		mg/L	1	7/10/2013 4:49:40 PM	R11837
Magnesium	280	5.0		mg/L	5	7/9/2013 4:36:30 PM	R11805
Manganese	0.063	0.0020	*	mg/L	1	7/9/2013 4:33:55 PM	R11805
Potassium	4.3	1.0		mg/L	1	7/9/2013 4:33:55 PM	R11805
Silver	ND	0.050		mg/L	10	7/10/2013 4:52:17 PM	R11837
Sodium	180	5.0		mg/L	5	7/9/2013 4:36:30 PM	R11805
Zinc	0.019	0.010		mg/L	1	7/9/2013 4:33:55 PM	R11805
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: DBD
Arsenic	0.0041	0.0010		mg/L	1	7/5/2013 12:00:01 PM	R11758
Selenium	0.017	0.0010		mg/L	1	7/5/2013 12:00:01 PM	R11758
Uranium	0.0025	0.0010		mg/L	1	7/5/2013 12:00:01 PM	R11758
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: IDC
Mercury	ND	0.00020		mg/L	1	7/2/2013 10:37:54 AM	8190
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: DAM
Benzene	ND	1.0		µg/L	1	7/2/2013 6:20:46 PM	R11708
Toluene	ND	1.0		µg/L	1	7/2/2013 6:20:46 PM	R11708
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 6:20:46 PM	R11708
Naphthalene	ND	2.0		µg/L	1	7/2/2013 6:20:46 PM	R11708
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 6:20:46 PM	R11708
Surr: 1,2-Dichloroethane-d4	89.8	70-130		%REC	1	7/2/2013 6:20:46 PM	R11708
Surr: 4-Bromofluorobenzene	94.7	70-130		%REC	1	7/2/2013 6:20:46 PM	R11708
Surr: Dibromofluoromethane	94.8	70-130		%REC	1	7/2/2013 6:20:46 PM	R11708
Surr: Toluene-d8	94.8	70-130		%REC	1	7/2/2013 6:20:46 PM	R11708
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JML
Conductivity	5800	0.010		µmhos/cm	1	6/28/2013 4:50:07 PM	R11669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 6/27/2013 8:20:00 AM

Lab ID: 1306C10-002

Matrix: AQUEOUS

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500-H+B: PH							Analyst: JML
pH	7.36	1.68	H	pH units	1	6/28/2013 4:50:07 PM	R11669
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	160	20		mg/L CaCO3	1	6/28/2013 4:50:07 PM	R11669
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/28/2013 4:50:07 PM	R11669
Total Alkalinity (as CaCO3)	160	20		mg/L CaCO3	1	6/28/2013 4:50:07 PM	R11669
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4340	40.0	*	mg/L	1	7/2/2013 5:02:00 PM	8177

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



## Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 6/27/2013 8:50:00 AM

Lab ID: 1306C10-003

Matrix: AQUEOUS

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Fluoride	1.4	0.10		mg/L	1	7/15/2013 4:35:33 PM	R11962
Chloride	43	10		mg/L	20	6/28/2013 4:33:47 PM	R11671
Bromide	0.12	0.10		mg/L	1	6/28/2013 4:21:23 PM	R11671
Nitrate+Nitrite as N	ND	1.0		mg/L	5	7/2/2013 4:42:40 AM	R11696
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/28/2013 4:21:23 PM	R11671
Sulfate	1000	10		mg/L	20	6/28/2013 4:33:47 PM	R11671
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: JLF
Barium	0.018	0.0020		mg/L	1	7/9/2013 4:39:05 PM	R11805
Cadmium	ND	0.0020		mg/L	1	7/9/2013 4:39:05 PM	R11805
Calcium	260	5.0		mg/L	5	7/9/2013 4:41:56 PM	R11805
Chromium	ND	0.0060		mg/L	1	7/9/2013 4:39:05 PM	R11805
Copper	ND	0.0060		mg/L	1	7/9/2013 4:39:05 PM	R11805
Iron	ND	0.020		mg/L	1	7/9/2013 4:39:05 PM	R11805
Lead	ND	0.0050		mg/L	1	7/10/2013 4:54:46 PM	R11837
Magnesium	98	1.0		mg/L	1	7/9/2013 4:39:05 PM	R11805
Manganese	0.0034	0.0020		mg/L	1	7/9/2013 4:39:05 PM	R11805
Potassium	2.8	1.0		mg/L	1	7/9/2013 4:39:05 PM	R11805
Silver	ND	0.025		mg/L	5	7/9/2013 4:41:56 PM	R11805
Sodium	34	1.0		mg/L	1	7/9/2013 4:39:05 PM	R11805
Zinc	ND	0.010		mg/L	1	7/9/2013 4:39:05 PM	R11805
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: DBD
Arsenic	0.0013	0.0010		mg/L	1	7/5/2013 12:02:40 PM	R11758
Selenium	0.0027	0.0010		mg/L	1	7/5/2013 12:02:40 PM	R11758
Uranium	0.0011	0.0010		mg/L	1	7/5/2013 12:02:40 PM	R11758
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: IDC
Mercury	ND	0.00020		mg/L	1	7/2/2013 10:39:40 AM	8190
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: DAM
Benzene	ND	1.0		µg/L	1	7/2/2013 6:49:14 PM	R11708
Toluene	ND	1.0		µg/L	1	7/2/2013 6:49:14 PM	R11708
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 6:49:14 PM	R11708
Naphthalene	ND	2.0		µg/L	1	7/2/2013 6:49:14 PM	R11708
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 6:49:14 PM	R11708
Surr: 1,2-Dichloroethane-d4	88.2	70-130		%REC	1	7/2/2013 6:49:14 PM	R11708
Surr: 4-Bromofluorobenzene	97.6	70-130		%REC	1	7/2/2013 6:49:14 PM	R11708
Surr: Dibromofluoromethane	92.2	70-130		%REC	1	7/2/2013 6:49:14 PM	R11708
Surr: Toluene-d8	95.9	70-130		%REC	1	7/2/2013 6:49:14 PM	R11708
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JML
Conductivity	2000	0.010		µmhos/cm	1	6/28/2013 5:00:53 PM	R11669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 6/27/2013 8:50:00 AM

Lab ID: 1306C10-003

Matrix: AQUEOUS

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500-H+B: PH							Analyst: JML
pH	7.61	1.68	H	pH units	1	6/28/2013 5:00:53 PM	R11669
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	190	20		mg/L CaCO3	1	6/28/2013 5:00:53 PM	R11669
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/28/2013 5:00:53 PM	R11669
Total Alkalinity (as CaCO3)	190	20		mg/L CaCO3	1	6/28/2013 5:00:53 PM	R11669
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1630	20.0	*	mg/L	1	7/2/2013 5:02:00 PM	8177

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



## Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 6/27/2013 9:15:00 AM

Lab ID: 1306C10-004

Matrix: AQUEOUS

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Fluoride	0.98	0.10		mg/L	1	7/15/2013 4:47:57 PM	R11962
Chloride	720	50		mg/L	100	7/2/2013 2:26:10 AM	R11696
Bromide	1.4	0.10		mg/L	1	6/28/2013 5:11:02 PM	R11671
Nitrate+Nitrite as N	3.2	1.0		mg/L	5	7/2/2013 4:55:04 AM	R11696
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/28/2013 5:11:02 PM	R11671
Sulfate	1000	50		mg/L	100	7/2/2013 2:26:10 AM	R11696
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: JLF
Barium	0.013	0.0020		mg/L	1	7/9/2013 4:44:25 PM	R11805
Cadmium	ND	0.0020		mg/L	1	7/9/2013 4:44:25 PM	R11805
Calcium	610	10		mg/L	10	7/10/2013 5:00:13 PM	R11837
Chromium	ND	0.0060		mg/L	1	7/9/2013 4:44:25 PM	R11805
Copper	ND	0.0060		mg/L	1	7/9/2013 4:44:25 PM	R11805
Iron	0.035	0.020		mg/L	1	7/9/2013 4:44:25 PM	R11805
Lead	ND	0.0050		mg/L	1	7/10/2013 4:57:36 PM	R11837
Magnesium	170	5.0		mg/L	5	7/9/2013 4:46:59 PM	R11805
Manganese	0.0021	0.0020		mg/L	1	7/9/2013 4:44:25 PM	R11805
Potassium	4.7	1.0		mg/L	1	7/9/2013 4:44:25 PM	R11805
Silver	ND	0.050		mg/L	10	7/10/2013 5:00:13 PM	R11837
Sodium	87	1.0		mg/L	1	7/9/2013 4:44:25 PM	R11805
Zinc	ND	0.010		mg/L	1	7/9/2013 4:44:25 PM	R11805
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: DBD
Arsenic	0.0045	0.0010		mg/L	1	7/5/2013 12:05:20 PM	R11758
Selenium	0.037	0.0010		mg/L	1	7/5/2013 12:05:20 PM	R11758
Uranium	0.0069	0.0010		mg/L	1	7/5/2013 12:05:20 PM	R11758
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: IDC
Mercury	ND	0.00020		mg/L	1	7/2/2013 10:41:26 AM	8190
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: DAM
Benzene	ND	1.0		µg/L	1	7/2/2013 9:41:26 PM	R11708
Toluene	ND	1.0		µg/L	1	7/2/2013 9:41:26 PM	R11708
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 9:41:26 PM	R11708
Naphthalene	ND	2.0		µg/L	1	7/2/2013 9:41:26 PM	R11708
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 9:41:26 PM	R11708
Surr: 1,2-Dichloroethane-d4	87.9	70-130		%REC	1	7/2/2013 9:41:26 PM	R11708
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	7/2/2013 9:41:26 PM	R11708
Surr: Dibromofluoromethane	90.3	70-130		%REC	1	7/2/2013 9:41:26 PM	R11708
Surr: Toluene-d8	97.7	70-130		%REC	1	7/2/2013 9:41:26 PM	R11708
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JML
Conductivity	4300	0.010		µmhos/cm	1	6/28/2013 5:11:55 PM	R11669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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**CLIENT:** Safety & Environmental Solutions  
**Project:** Lattion Pit  
**Lab ID:** 1306C10-004

**Client Sample ID:** MW-2  
**Collection Date:** 6/27/2013 9:15:00 AM  
**Received Date:** 6/28/2013 9:50:00 AM

**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>SM4500-H+B: PH</b>							Analyst: <b>JML</b>
pH	7.36	1.68	H	pH units	1	6/28/2013 5:11:55 PM	R11669
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JML</b>
Bicarbonate (As CaCO3)	150	20		mg/L CaCO3	1	6/28/2013 5:11:55 PM	R11669
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	6/28/2013 5:11:55 PM	R11669
Total Alkalinity (as CaCO3)	150	20		mg/L CaCO3	1	6/28/2013 5:11:55 PM	R11669
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	3380	40.0	*	mg/L	1	7/2/2013 5:02:00 PM	8177

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



Analytical Report

Lab Order 1306C10

Date Reported: 7/18/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: Trip Blank

Project: Lattion Pit

Collection Date: 6/27/2013 4:30:00 PM

Lab ID: 1306C10-005

Matrix: TRIP BLANK

Received Date: 6/28/2013 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DAM	
Benzene	ND	1.0		µg/L	1	7/2/2013 10:10:07 PM	R11708
Toluene	ND	1.0		µg/L	1	7/2/2013 10:10:07 PM	R11708
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 10:10:07 PM	R11708
Naphthalene	ND	2.0		µg/L	1	7/2/2013 10:10:07 PM	R11708
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 10:10:07 PM	R11708
Surr: 1,2-Dichloroethane-d4	87.1	70-130		%REC	1	7/2/2013 10:10:07 PM	R11708
Surr: 4-Bromofluorobenzene	99.4	70-130		%REC	1	7/2/2013 10:10:07 PM	R11708
Surr: Dibromofluoromethane	92.5	70-130		%REC	1	7/2/2013 10:10:07 PM	R11708
Surr: Toluene-d8	95.9	70-130		%REC	1	7/2/2013 10:10:07 PM	R11708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 9 of 19

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2		
	1306C10-01		1306C10-02		1306C10-03		1306C10-04		
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sodium	200	8.70	180	7.83	34	1.48	87	3.78	
Potassium	4.9	0.13	4.3	0.11	2.8	0.07	4.7	0.12	
Calcium	910	45.41	750	37.43	260	12.97	610	30.44	
Magnesium	300	24.69	280	23.05	98	8.07	170	13.99	
<b>Total Cations</b>		78.93		68.41		22.59		48.34	
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sulfate	1600	33.31	1600	33.31	1000	20.82	1000	20.82	
Chloride	1400	39.49	1000	28.21	43	1.21	720	20.31	
Bicarbonate (CaCO <sub>3</sub> )	140	2.80	160	3.20	190	3.80	150	3.00	
Carbonate (CaCO <sub>3</sub> )									
Phosphate (P)									
Nitrite (N)									
Nitrate (N)									
Fluoride	1.3	0.07	1.2	0.06	-		3.2	0.23	
Bromide	2.1	0.03	1.7	0.02	1.4	0.07	0.98	0.05	
<b>Total Anions</b>		75.70		64.80	2000	25.91		44.43	
Elect. Cond. (µMhos/cm)	6800		5800				4300		
<b>CATION/ANION RATIO</b>		1.04		1.06		0.87		1.09	
% Difference		2		3		7		4	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>									
TDS (measured)	5330		4340		1630		3380		
TDS (calculated)	4502		3913		1553		2698		
Ratio meas TDS:calc TDS		1.2		1.1		1.0		1.3	
Ratio Meas. TDS:EC		0.78		0.75		0.82		0.79	
Ratio Calc. TDS:EC		0.66		0.67		0.78		0.63	
Ratio of anion sum:EC		1.1		1.1		1.3		1.0	
Ratio of cation sum:EC		1.2		1.2		1.1		1.1	

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10  
18-Jul-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R11805	RunNo:	11805					
Prep Date:		Analysis Date:	7/9/2013	SeqNo:	335551	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R11805	RunNo:	11805					
Prep Date:		Analysis Date:	7/9/2013	SeqNo:	335552	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Calcium	48	1.0	50.00	0	96.8	85	115			
Chromium	0.53	0.0060	0.5000	0	106	85	115			
Copper	0.51	0.0060	0.5000	0	102	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Magnesium	49	1.0	50.00	0	98.8	85	115			
Manganese	0.51	0.0020	0.5000	0	103	85	115			
Potassium	48	1.0	50.00	0	95.4	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Sodium	48	1.0	50.00	0	96.7	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R11837	RunNo:	11837					
Prep Date:		Analysis Date:	7/10/2013	SeqNo:	336474	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Lead	ND	0.0050								
Silver	ND	0.0050								

Qualifiers:										
*	Value exceeds Maximum Contaminant Level.				B	Analyte detected in the associated Method Blank				
E	Value above quantitation range				H	Holding times for preparation or analysis exceeded				
J	Analyte detected below quantitation limits				ND	Not Detected at the Reporting Limit				
O	RSD is greater than RSDlimit				P	Sample pH greater than 2 for VOA and TOC only.				
R	RPD outside accepted recovery limits				RL	Reporting Detection Limit				

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10  
18-Jul-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R11837	RunNo:	11837					
Prep Date:		Analysis Date:	7/10/2013	SeqNo:	336475	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	96.6	85	115			
Lead	0.50	0.0050	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1306C10

18-Jul-13

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R11758</b>			RunNo: <b>11758</b>						
Prep Date:	Analysis Date: <b>7/5/2013</b>			SeqNo: <b>334311</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID <b>MB</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R11758</b>			RunNo: <b>11758</b>						
Prep Date:	Analysis Date: <b>7/5/2013</b>			SeqNo: <b>334312</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R11758</b>			RunNo: <b>11758</b>						
Prep Date:	Analysis Date: <b>7/5/2013</b>			SeqNo: <b>334315</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.4	85	115			
Selenium	0.024	0.0010	0.02500	0	96.7	85	115			
Uranium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R11758</b>			RunNo: <b>11758</b>						
Prep Date:	Analysis Date: <b>7/5/2013</b>			SeqNo: <b>334316</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			
Selenium	0.025	0.0010	0.02500	0	98.1	85	115			
Uranium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID <b>LCS</b>	SampType: <b>LCS</b>			TestCode: <b>EPA 200.8: Dissolved Metals</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R11818</b>			RunNo: <b>11818</b>						
Prep Date:	Analysis Date: <b>7/9/2013</b>			SeqNo: <b>335947</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.026	0.0010	0.02500	0	103	85	115			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 O RSD is greater than RSDlimit  
 R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 P Sample pH greater than 2 for VOA and TOC only.  
 RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10

18-Jul-13

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R11818	RunNo:	11818					
Prep Date:		Analysis Date:	7/9/2013	SeqNo:	335950	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10  
18-Jul-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-8190	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury						
Client ID:	PBW	Batch ID:	8190	RunNo:	11697						
Prep Date:	7/1/2013	Analysis Date:	7/2/2013	SeqNo:	332227	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-8190	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury						
Client ID:	LCSW	Batch ID:	8190	RunNo:	11697						
Prep Date:	7/1/2013	Analysis Date:	7/2/2013	SeqNo:	332228	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0050	0.00020	0.005000	0	100	80	120				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10  
18-Jul-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R11671	RunNo:	11671					
Prep Date:		Analysis Date:	6/28/2013	SeqNo:	331053	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R11671	RunNo:	11671					
Prep Date:		Analysis Date:	6/28/2013	SeqNo:	331054	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.8	90	110			
Bromide	2.5	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	101	90	110			
Sulfate	9.9	0.50	10.00	0	98.7	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R11696	RunNo:	11696					
Prep Date:		Analysis Date:	7/1/2013	SeqNo:	332106	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R11696	RunNo:	11696					
Prep Date:		Analysis Date:	7/1/2013	SeqNo:	332107	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.5	0.50	5.000	0	90.6	90	110			
Sulfate	9.2	0.50	10.00	0	92.2	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	94.1	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R11962	RunNo:	11962					
Prep Date:		Analysis Date:	7/15/2013	SeqNo:	339981	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- O

RSD is greater than RSDlimit
- R

RPD outside accepted recovery limits
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- P

Sample pH greater than 2 for VOA and TOC only.
- RL

Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10

18-Jul-13

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID	LCS-b		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R11962		RunNo: 11962					
Prep Date:			Analysis Date: 7/15/2013		SeqNo: 339983		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.45	0.10	0.5000	0	90.4	90	110			

Sample ID	MB		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBW		Batch ID: R11991		RunNo: 11991					
Prep Date:			Analysis Date: 7/16/2013		SeqNo: 341039		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID:	R11991		RunNo:	11991				
Prep Date:			Analysis Date:	7/16/2013		SeqNo:	341040	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluoride	0.47	0.10	0.5000	0	94.3	90	110				

### Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
R RPD outside accepted recovery limits	RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10  
18-Jul-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R11708	RunNo:	11708					
Prep Date:		Analysis Date:	7/2/2013	SeqNo:	332598	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	2.0								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.2		10.00		91.5	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R11708	RunNo:	11708					
Prep Date:		Analysis Date:	7/2/2013	SeqNo:	332599	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	21	1.0	20.00	0	106	80	120			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.0	70	130			
Surr: Toluene-d8	9.5		10.00		95.0	70	130			

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10  
18-Jul-13

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	mb-1	SampType:	mblk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R11669	RunNo:	11669					
Prep Date:		Analysis Date:	6/28/2013	SeqNo:	330937	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	ics-1	SampType:	ics	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R11669	RunNo:	11669					
Prep Date:		Analysis Date:	6/28/2013	SeqNo:	330938	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	99.4	90	110			

Sample ID	mb-2	SampType:	mblk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R11669	RunNo:	11669					
Prep Date:		Analysis Date:	6/28/2013	SeqNo:	330957	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	ics-2	SampType:	ics	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R11669	RunNo:	11669					
Prep Date:		Analysis Date:	6/28/2013	SeqNo:	330958	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	99.0	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

O RSD is greater than RSDlimit

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

P Sample pH greater than 2 for VOA and TOC only.

RL Reporting Detection Limit

Page 18 of 19

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306C10

18-Jul-13

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-8177	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	8177	RunNo:	11707					
Prep Date:	7/1/2013	Analysis Date:	7/2/2013	SeqNo:	332529	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-8177	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	8177	RunNo:	11707					
Prep Date:	7/1/2013	Analysis Date:	7/2/2013	SeqNo:	332530	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

O RSD is greater than RSDlimit

R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

P Sample pH greater than 2 for VOA and TOC only.

RL Reporting Detection Limit

Page 19 of 19





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Safety Env Solutions

Work Order Number: 1306C10

RcptNo: 1

Received by/date:

Logged By:

Michelle Garcia

6/28/2013 9:50:00 AM

Michelle Garcia

Completed By:

Michelle Garcia

6/28/2013 11:14:54 AM

Michelle Garcia

Reviewed By:

mg/IO

06/28/13

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? UPS

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: 12  
( $\leq 2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: IO

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 14, 2018

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 397-0510  
FAX (575) 393-4388

RE: Lattion Pit

OrderNo.: 1803F64

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/29/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 18, 2018.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 3/27/2018 9:20:00 AM

Lab ID: 1803F64-001

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>DBK</b>
Arsenic	ND	0.0050		mg/L	5	3/30/2018 1:54:07 PM	B50213
Copper	ND	0.0050		mg/L	5	3/30/2018 1:54:07 PM	B50213
Lead	ND	0.0025		mg/L	5	3/30/2018 1:54:07 PM	B50213
Selenium	ND	0.0050		mg/L	5	3/30/2018 1:54:07 PM	B50213
Uranium	ND	0.0025		mg/L	5	3/30/2018 1:54:07 PM	B50213
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Fluoride	0.42	0.10		mg/L	1	4/5/2018 3:20:07 PM	R50370
Chloride	1700	50		mg/L	100	4/16/2018 3:36:23 PM	R50615
Bromide	2.2	0.10		mg/L	1	4/5/2018 3:20:07 PM	R50370
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	4/5/2018 3:20:07 PM	R50370
Sulfate	1700	50		mg/L	100	4/16/2018 3:36:23 PM	R50615
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/5/2018 9:07:34 PM	R50370
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	6600	5.0		µmhos/cm	1	4/9/2018 8:06:41 PM	R50434
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO <sub>3</sub> )	151.7	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 8:58:10 PM	R50247
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L CaCO <sub>3</sub>	1	4/2/2018 8:58:10 PM	R50247
Total Alkalinity (as CaCO <sub>3</sub> )	151.7	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 8:58:10 PM	R50247
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	5460	20.0	*	mg/L	1	4/4/2018 4:34:00 PM	37400
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	7.48		H	pH units	1	4/2/2018 8:58:10 PM	R50247
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>pmf</b>
Barium	0.015	0.0020		mg/L	1	3/30/2018 2:33:06 PM	A50228
Cadmium	ND	0.0020		mg/L	1	3/30/2018 2:33:06 PM	A50228
Calcium	910	10		mg/L	10	4/2/2018 4:48:38 PM	A50251
Chromium	ND	0.0060		mg/L	1	3/30/2018 2:33:06 PM	A50228
Iron	ND	0.020		mg/L	1	3/30/2018 2:33:06 PM	A50228
Magnesium	350	5.0		mg/L	5	4/2/2018 4:46:30 PM	A50251
Manganese	0.14	0.0020	*	mg/L	1	3/30/2018 2:33:06 PM	A50228
Potassium	4.2	1.0		mg/L	1	3/30/2018 2:33:06 PM	A50228
Silver	0.031	0.0050		mg/L	1	3/30/2018 2:33:06 PM	A50228
Sodium	280	5.0		mg/L	5	4/2/2018 4:46:30 PM	A50251
Zinc	0.020	0.010		mg/L	1	3/30/2018 2:33:06 PM	A50228
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	4/6/2018 3:04:50 PM	37465

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Page 1 of 19



Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 3/27/2018 9:20:00 AM

Lab ID: 1803F64-001

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/6/2018 7:47:00 PM	SL50387
Toluene	ND	1.0		µg/L	1	4/6/2018 7:47:00 PM	SL50387
Ethylbenzene	ND	1.0		µg/L	1	4/6/2018 7:47:00 PM	SL50387
Naphthalene	ND	2.0		µg/L	1	4/6/2018 7:47:00 PM	SL50387
1-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 7:47:00 PM	SL50387
2-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 7:47:00 PM	SL50387
Xylenes, Total	ND	1.5		µg/L	1	4/6/2018 7:47:00 PM	SL50387
Surr: 1,2-Dichloroethane-d4	99.0	70-130		%Rec	1	4/6/2018 7:47:00 PM	SL50387
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	4/6/2018 7:47:00 PM	SL50387
Surr: Dibromofluoromethane	97.6	70-130		%Rec	1	4/6/2018 7:47:00 PM	SL50387
Surr: Toluene-d8	100	70-130		%Rec	1	4/6/2018 7:47:00 PM	SL50387

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 3/27/2018 11:15:00 AM

Lab ID: 1803F64-002

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>DBK</b>
Arsenic	ND	0.0050		mg/L	5	3/30/2018 1:56:20 PM	B50213
Copper	ND	0.0050		mg/L	5	3/30/2018 1:56:20 PM	B50213
Lead	ND	0.0025		mg/L	5	3/30/2018 1:56:20 PM	B50213
Selenium	ND	0.0050		mg/L	5	3/30/2018 1:56:20 PM	B50213
Uranium	ND	0.0025		mg/L	5	3/30/2018 1:56:20 PM	B50213
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Fluoride	0.62	0.10		mg/L	1	4/5/2018 3:44:55 PM	R50370
Chloride	930	50		mg/L	100	4/16/2018 3:49:15 PM	R50615
Bromide	1.7	0.10		mg/L	1	4/5/2018 3:44:55 PM	R50370
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	4/5/2018 3:44:55 PM	R50370
Sulfate	1400	50		mg/L	100	4/16/2018 3:49:15 PM	R50615
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/5/2018 9:19:58 PM	R50370
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	5400	5.0		µmhos/cm	1	4/9/2018 8:11:05 PM	R50434
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO <sub>3</sub> )	146.7	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:12:24 PM	R50247
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:12:24 PM	R50247
Total Alkalinity (as CaCO <sub>3</sub> )	146.7	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:12:24 PM	R50247
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	4360	20.0	*	mg/L	1	4/4/2018 4:34:00 PM	37400
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	7.66		H	pH units	1	4/2/2018 9:12:24 PM	R50247
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>pmf</b>
Barium	0.011	0.0020		mg/L	1	3/30/2018 2:35:06 PM	A50228
Cadmium	ND	0.0020		mg/L	1	3/30/2018 2:35:06 PM	A50228
Calcium	770	10		mg/L	10	4/2/2018 4:59:20 PM	A50251
Chromium	ND	0.0060		mg/L	1	3/30/2018 2:35:06 PM	A50228
Iron	0.023	0.020		mg/L	1	3/30/2018 2:35:06 PM	A50228
Magnesium	290	5.0		mg/L	5	4/2/2018 4:57:00 PM	A50251
Manganese	0.027	0.0020		mg/L	1	3/30/2018 2:35:06 PM	A50228
Potassium	3.7	1.0		mg/L	1	3/30/2018 2:35:06 PM	A50228
Silver	0.025	0.0050		mg/L	1	3/30/2018 2:35:06 PM	A50228
Sodium	150	5.0		mg/L	5	4/2/2018 4:57:00 PM	A50251
Zinc	0.027	0.010		mg/L	1	3/30/2018 2:35:06 PM	A50228
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	4/6/2018 3:07:05 PM	37465

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 3/27/2018 11:15:00 AM

Lab ID: 1803F64-002

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/6/2018 8:11:00 PM	SL50387
Toluene	ND	1.0		µg/L	1	4/6/2018 8:11:00 PM	SL50387
Ethylbenzene	ND	1.0		µg/L	1	4/6/2018 8:11:00 PM	SL50387
Naphthalene	ND	2.0		µg/L	1	4/6/2018 8:11:00 PM	SL50387
1-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 8:11:00 PM	SL50387
2-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 8:11:00 PM	SL50387
Xylenes, Total	ND	1.5		µg/L	1	4/6/2018 8:11:00 PM	SL50387
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	4/6/2018 8:11:00 PM	SL50387
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	4/6/2018 8:11:00 PM	SL50387
Surr: Dibromofluoromethane	102	70-130		%Rec	1	4/6/2018 8:11:00 PM	SL50387
Surr: Toluene-d8	101	70-130		%Rec	1	4/6/2018 8:11:00 PM	SL50387

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 3/27/2018 12:05:00 PM

Lab ID: 1803F64-003

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>DBK</b>
Arsenic	0.0011	0.0010		mg/L	1	3/30/2018 1:26:24 PM	B50213
Copper	ND	0.0010		mg/L	1	3/30/2018 1:26:24 PM	B50213
Lead	ND	0.00050		mg/L	1	3/30/2018 1:26:24 PM	B50213
Selenium	ND	0.0010		mg/L	1	3/30/2018 1:26:24 PM	B50213
Uranium	0.00057	0.00050		mg/L	1	3/30/2018 1:26:24 PM	B50213
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Fluoride	1.7	0.10		mg/L	1	4/5/2018 4:09:44 PM	R50370
Chloride	41	10		mg/L	20	4/5/2018 4:22:08 PM	R50370
Bromide	0.15	0.10		mg/L	1	4/5/2018 4:09:44 PM	R50370
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	4/5/2018 4:09:44 PM	R50370
Sulfate	880	10		mg/L	20	4/5/2018 4:22:08 PM	R50370
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/5/2018 9:32:22 PM	R50370
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	1900	5.0		µmhos/cm	1	4/9/2018 8:23:20 PM	R50434
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO <sub>3</sub> )	180.8	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:22:20 PM	R50247
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:22:20 PM	R50247
Total Alkalinity (as CaCO <sub>3</sub> )	180.8	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:22:20 PM	R50247
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	1620	20.0	*	mg/L	1	4/4/2018 4:34:00 PM	37400
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	7.86		H	pH units	1	4/2/2018 9:22:20 PM	R50247
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>pmf</b>
Barium	0.018	0.0020		mg/L	1	3/30/2018 2:37:06 PM	A50228
Cadmium	ND	0.0020		mg/L	1	3/30/2018 2:37:06 PM	A50228
Calcium	280	5.0		mg/L	5	4/2/2018 5:03:39 PM	A50251
Chromium	ND	0.0060		mg/L	1	3/30/2018 2:37:06 PM	A50228
Iron	ND	0.020		mg/L	1	3/30/2018 2:37:06 PM	A50228
Magnesium	100	5.0		mg/L	5	4/2/2018 5:03:39 PM	A50251
Manganese	0.089	0.0020	*	mg/L	1	3/30/2018 2:37:06 PM	A50228
Potassium	2.8	1.0		mg/L	1	3/30/2018 2:37:06 PM	A50228
Silver	0.011	0.0050		mg/L	1	3/30/2018 2:37:06 PM	A50228
Sodium	37	1.0		mg/L	1	4/2/2018 5:01:31 PM	A50251
Zinc	0.032	0.010		mg/L	1	3/30/2018 2:37:06 PM	A50228
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	4/6/2018 3:09:21 PM	37465

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 3/27/2018 12:05:00 PM

Lab ID: 1803F64-003

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/6/2018 8:35:00 PM	SL50387
Toluene	ND	1.0		µg/L	1	4/6/2018 8:35:00 PM	SL50387
Ethylbenzene	ND	1.0		µg/L	1	4/6/2018 8:35:00 PM	SL50387
Naphthalene	ND	2.0		µg/L	1	4/6/2018 8:35:00 PM	SL50387
1-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 8:35:00 PM	SL50387
2-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 8:35:00 PM	SL50387
Xylenes, Total	ND	1.5		µg/L	1	4/6/2018 8:35:00 PM	SL50387
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	4/6/2018 8:35:00 PM	SL50387
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/6/2018 8:35:00 PM	SL50387
Surr: Dibromofluoromethane	102	70-130		%Rec	1	4/6/2018 8:35:00 PM	SL50387
Surr: Toluene-d8	99.4	70-130		%Rec	1	4/6/2018 8:35:00 PM	SL50387

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 3/27/2018 12:35:00 PM

Lab ID: 1803F64-004

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>DBK</b>
Arsenic	ND	0.0050		mg/L	5	3/30/2018 1:58:33 PM	B50213
Copper	ND	0.0010		mg/L	1	3/30/2018 1:28:38 PM	B50213
Lead	ND	0.0025		mg/L	5	3/30/2018 1:58:33 PM	B50213
Selenium	0.017	0.0050		mg/L	5	3/30/2018 1:58:33 PM	B50213
Uranium	0.0059	0.0025		mg/L	5	3/30/2018 1:58:33 PM	B50213
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Fluoride	0.44	0.10		mg/L	1	4/5/2018 4:34:32 PM	R50370
Chloride	640	25		mg/L	50	4/16/2018 4:02:07 PM	R50615
Bromide	1.1	0.10		mg/L	1	4/5/2018 4:34:32 PM	R50370
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	4/5/2018 4:34:32 PM	R50370
Sulfate	980	10		mg/L	20	4/5/2018 4:46:57 PM	R50370
Nitrate+Nitrite as N	2.4	1.0		mg/L	5	4/16/2018 2:44:57 PM	R50615
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	3600	5.0		µmhos/cm	1	4/9/2018 8:27:14 PM	R50434
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO <sub>3</sub> )	156.9	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:32:57 PM	R50247
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:32:57 PM	R50247
Total Alkalinity (as CaCO <sub>3</sub> )	156.9	20.00		mg/L CaCO <sub>3</sub>	1	4/2/2018 9:32:57 PM	R50247
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	2870	20.0	*	mg/L	1	4/4/2018 4:34:00 PM	37400
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	7.66		H	pH units	1	4/2/2018 9:32:57 PM	R50247
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>pmf</b>
Barium	0.013	0.0020		mg/L	1	3/30/2018 2:39:18 PM	A50228
Cadmium	ND	0.0020		mg/L	1	3/30/2018 2:39:18 PM	A50228
Calcium	580	10		mg/L	10	4/3/2018 5:14:22 PM	A50282
Chromium	ND	0.0060		mg/L	1	3/30/2018 2:39:18 PM	A50228
Iron	0.040	0.020		mg/L	1	3/30/2018 2:39:18 PM	A50228
Magnesium	180	5.0		mg/L	5	4/2/2018 5:08:02 PM	A50251
Manganese	0.0023	0.0020		mg/L	1	3/30/2018 2:39:18 PM	A50228
Potassium	4.5	1.0		mg/L	1	3/30/2018 2:39:18 PM	A50228
Silver	0.021	0.0050		mg/L	1	3/30/2018 2:39:18 PM	A50228
Sodium	97	1.0		mg/L	1	4/2/2018 5:05:51 PM	A50251
Zinc	0.028	0.010		mg/L	1	3/30/2018 2:39:18 PM	A50228
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	4/6/2018 3:16:15 PM	37465

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1803F64

Date Reported: 5/14/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 3/27/2018 12:35:00 PM

Lab ID: 1803F64-004

Matrix: AQUEOUS

Received Date: 3/29/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/6/2018 8:59:00 PM	SL50387
Toluene	ND	1.0		µg/L	1	4/6/2018 8:59:00 PM	SL50387
Ethylbenzene	ND	1.0		µg/L	1	4/6/2018 8:59:00 PM	SL50387
Naphthalene	ND	2.0		µg/L	1	4/6/2018 8:59:00 PM	SL50387
1-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 8:59:00 PM	SL50387
2-Methylnaphthalene	ND	4.0		µg/L	1	4/6/2018 8:59:00 PM	SL50387
Xylenes, Total	ND	1.5		µg/L	1	4/6/2018 8:59:00 PM	SL50387
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	4/6/2018 8:59:00 PM	SL50387
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	4/6/2018 8:59:00 PM	SL50387
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	4/6/2018 8:59:00 PM	SL50387
Surr: Toluene-d8	97.7	70-130		%Rec	1	4/6/2018 8:59:00 PM	SL50387

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1 1803F64-001		MW-4 1803F64-002		MW-3 1803F64-003		MW-2 1803F64-004	
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sodium	280	12.18	150	6.52	37	1.61	97	4.22
Potassium	4.2	0.11	3.7	0.09	2.8	0.07	4.5	0.12
Calcium	910	45.41	770	38.42	280	13.97	580	28.94
Magnesium	350	28.81	290	23.87	100	8.23	180	14.81
<b>Total Cations</b>		86.50		68.91		23.88		48.09
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sulfate	1700	35.39	1400	29.15	880	18.32	980	20.40
Chloride	1700	47.95	930	26.23	41	1.16	640	18.05
Bicarbonate (CaCO <sub>3</sub> )	151.7	3.03	146.7	2.93	180.8	3.61	156.9	3.14
Carbonate (CaCO <sub>3</sub> )								
Phosphate (P)								
Nitrite (N)								
Nitrate (N)	0.42	0.02	0.62	0.03	1.7	0.09	2.4	0.17
Fluoride							0.44	0.02
Bromide	2.2	0.03	1.7	0.02	0.15	0.00	1.1	0.01
<b>Total Anions</b>		86.43		58.37		23.18		41.80
Elect. Cond. (µMhos/cm)	6600		5400		1900		3600	
<b>CATION/ANION RATIO</b>		1.00		1.18		1.03		1.15
% Difference		0		8		1		7
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>								
TDS (measured)	5460		4360		1620		2870	
TDS (calculated)	5038		3634		1451		2588	
Ratio meas TDS:calc TDS		1.1		1.2		1.1		1.1
Ratio Meas. TDS:EC		0.83		0.81		0.85		0.80
Ratio Calc. TDS:EC		0.76		0.67		0.76		0.72
Ratio of anion sum:EC		1.3		1.1		1.2		1.2
Ratio of cation sum:EC		1.3		1.3		1.3		1.3

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9.

Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64  
14-May-18

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A50228	RunNo:	50228					
Prep Date:		Analysis Date:	3/30/2018	SeqNo:	1627096	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LL LCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A50228	RunNo:	50228					
Prep Date:		Analysis Date:	3/30/2018	SeqNo:	1627097	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	ND	0.0020	0.002000	0	66.5	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.022	0.020	0.02000	0	109	50	150			
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Potassium	ND	1.0	0.5000	0	96.5	50	150			
Silver	ND	0.0050	0.005000	0	96.8	50	150			
Zinc	ND	0.010	0.005000	0	116	50	150			

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A50228	RunNo:	50228					
Prep Date:		Analysis Date:	3/30/2018	SeqNo:	1627098	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.8	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.4	85	115			
Chromium	0.49	0.0060	0.5000	0	97.9	85	115			
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Manganese	0.49	0.0020	0.5000	0	98.4	85	115			
Potassium	47	1.0	50.00	0	94.3	85	115			
Silver	0.092	0.0050	0.1000	0	92.3	85	115			
Zinc	0.49	0.010	0.5000	0	98.8	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 9 of 19

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1803F64****14-May-18****Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID <b>MB-A</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>A50251</b>		RunNo: <b>50251</b>							
Prep Date:	Analysis Date: <b>4/2/2018</b>		SeqNo: <b>1628042</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0
Magnesium	ND	1.0
Sodium	ND	1.0

Sample ID <b>LL LCS-A</b>	SampType: <b>LCSLL</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>A50251</b>		RunNo: <b>50251</b>							
Prep Date:	Analysis Date: <b>4/2/2018</b>		SeqNo: <b>1628043</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0	0.5000	0	103	50	150
Magnesium	ND	1.0	0.5000	0	101	50	150
Sodium	ND	1.0	0.5000	0	114	50	150

Sample ID <b>LCS-A</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>A50251</b>		RunNo: <b>50251</b>							
Prep Date:	Analysis Date: <b>4/2/2018</b>		SeqNo: <b>1628044</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	48	1.0	50.00	0	95.8	85	115
Magnesium	48	1.0	50.00	0	96.5	85	115
Sodium	48	1.0	50.00	0	96.2	85	115

Sample ID <b>MB-A</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>A50282</b>		RunNo: <b>50282</b>							
Prep Date:	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629556</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0
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Sample ID <b>LL LCS-A</b>	SampType: <b>LCSLL</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>A50282</b>		RunNo: <b>50282</b>							
Prep Date:	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629557</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0	0.5000	0	104	50	150
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**Qualifiers:**

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64

14-May-18

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A50282	RunNo:	50282					
Prep Date:		Analysis Date:	4/3/2018	SeqNo:	1629558	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	95.6	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 11 of 19

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64  
14-May-18

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	B50213	RunNo:	50213					
Prep Date:		Analysis Date:	3/30/2018	SeqNo:	1626481	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	LL LCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	B50213	RunNo:	50213					
Prep Date:		Analysis Date:	3/30/2018	SeqNo:	1626482	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	99.0	50	150			
Copper	0.0011	0.0010	0.001000	0	106	50	150			
Lead	ND	0.00050	0.0005000	0	99.5	50	150			
Selenium	ND	0.0010	0.001000	0	95.7	50	150			
Uranium	ND	0.00050	0.0005000	0	96.3	50	150			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	B50213	RunNo:	50213					
Prep Date:		Analysis Date:	3/30/2018	SeqNo:	1626483	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Copper	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.012	0.00050	0.01250	0	99.3	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64

14-May-18

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-37465	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	37465	RunNo:	50382					
Prep Date:	4/6/2018	Analysis Date:	4/6/2018	SeqNo:	1632665	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND 0.000200									

Sample ID	LCS-37465	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	37465	RunNo:	50382					
Prep Date:	4/6/2018	Analysis Date:	4/6/2018	SeqNo:	1632666	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00488	0.000200	0.005000	0	97.5	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64  
14-May-18

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R50370	RunNo:	50370					
Prep Date:		Analysis Date:	4/5/2018	SeqNo:	1631916	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R50370	RunNo:	50370					
Prep Date:		Analysis Date:	4/5/2018	SeqNo:	1631917	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.1	90	110			
Chloride	4.6	0.50	5.000	0	91.8	90	110			
Bromide	2.3	0.10	2.500	0	94.0	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.9	90	110			
Sulfate	9.1	0.50	10.00	0	91.5	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	95.4	90	110			

Sample ID	MB	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R50615	RunNo:	50615					
Prep Date:		Analysis Date:	4/16/2018	SeqNo:	1641959	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R50615	RunNo:	50615					
Prep Date:		Analysis Date:	4/16/2018	SeqNo:	1641960	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.0	90	110			
Sulfate	9.1	0.50	10.00	0	90.9	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	94.3	90	110			

Qualifiers:										
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank							
D	Sample Diluted Due to Matrix	E	Value above quantitation range							
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits							
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range							
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit							
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified							



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64  
14-May-18

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	SL50387	RunNo:	50387					
Prep Date:		Analysis Date:	4/6/2018	SeqNo:	1633197	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	87.6	70	130			
Toluene	19	1.0	20.00	0	95.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.5	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	SL50387	RunNo:	50387					
Prep Date:		Analysis Date:	4/6/2018	SeqNo:	1633198	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.7	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64

14-May-18

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	lcs-1 ~20uS eC		SampType: LCS		TestCode: SM2510B: Specific Conductance					
Client ID:	LCSW		Batch ID: R50434		RunNo: 50434					
Prep Date:			Analysis Date: 4/9/2018		SeqNo: 1635167		Units: µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	23	5.0	19.98	0	115	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64

14-May-18

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	1803f64-001b dup			SampType:	DUP		TestCode:	SM4500-H+B / 9040C: pH			
Client ID:	MW-1		Batch ID:	R50247		RunNo:	50247				
Prep Date:			Analysis Date:	4/2/2018		SeqNo:	1628594		Units:	pH units	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
pH	7.53									H	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64

14-May-18

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID	mb-1 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R50247	RunNo:	50247					
Prep Date:		Analysis Date:	4/2/2018	SeqNo:	1628467	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1 alk	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R50247	RunNo:	50247					
Prep Date:		Analysis Date:	4/2/2018	SeqNo:	1628468	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.72	20.00	80.00	0	99.7	90	110			

Sample ID	lcsd-1 alk	SampType:	LCSD	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSS02	Batch ID:	R50247	RunNo:	50247					
Prep Date:		Analysis Date:	4/2/2018	SeqNo:	1628469	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.80	20.00	80.00	0	99.7	90	110	0.100	20	

Sample ID	mb-2 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R50247	RunNo:	50247					
Prep Date:		Analysis Date:	4/2/2018	SeqNo:	1628492	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-2 alk	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R50247	RunNo:	50247					
Prep Date:		Analysis Date:	4/2/2018	SeqNo:	1628493	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.88	20.00	80.00	0	99.8	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803F64  
14-May-18

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID	MB-37400	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	37400	RunNo:	50324					
Prep Date:	4/3/2018	Analysis Date:	4/4/2018	SeqNo:	1630385	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-37400	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	37400	RunNo:	50324					
Prep Date:	4/3/2018	Analysis Date:	4/4/2018	SeqNo:	1630386	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	997	20.0	1000	0	99.7	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 19 of 19
D Sample Diluted Due to Matrix	E Value above quantitation range	
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
PQL Practical Quantitative Limit	RL Reporting Detection Limit	
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Safety Env Solutions

Work Order Number: 1803F64

RcptNo: 1

Received By: Erin Melendrez 3/29/2018 9:40:00 AM

Completed By: Ashley Gallegos 3/29/2018 1:34:40 PM

Reviewed By: DDS 3/29/18 labeled by: mw 3/29/18

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
5. Sample(s) in proper container(s)? Yes ☒ No ☐  
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐  
10. Were any sample containers received broken? Yes ☐ No ☒  
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐  
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
13. Is it clear what analyses were requested? Yes ☒ No ☐  
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 12  
(2 or >12 unless noted)  
Adjusted? NO  
Checked by: mw

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Not Present			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 18, 2019

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 397-0510  
FAX (575) 393-4388

RE: Lattion Pit

OrderNo.: 1903A97

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/22/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 3/21/2019 12:45:00 PM

Lab ID: 1903A97-001

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: pmf
Antimony	ND	0.0050		mg/L	5	3/27/2019 12:45:38 PM	C58650
Arsenic	ND	0.0050		mg/L	5	3/27/2019 12:45:38 PM	C58650
Copper	ND	0.010		mg/L	10	3/27/2019 12:55:28 PM	C58650
Lead	ND	0.0050		mg/L	10	3/28/2019 6:43:30 PM	C58733
Selenium	ND	0.010		mg/L	10	3/28/2019 6:43:30 PM	C58733
Thallium	ND	0.0025		mg/L	5	3/27/2019 12:45:38 PM	C58650
Uranium	ND	0.0050		mg/L	10	3/28/2019 6:43:30 PM	C58733
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: smb
Fluoride	0.62	0.10		mg/L	1	4/2/2019 1:01:04 AM	A58816
Chloride	1500	100		mg/L	200	3/29/2019 4:41:20 AM	A58712
Bromide	2.1	0.10		mg/L	1	3/29/2019 4:28:55 AM	A58712
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/29/2019 4:28:55 AM	A58712
Sulfate	1600	100		mg/L	200	3/29/2019 4:41:20 AM	A58712
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/29/2019 6:33:00 AM	A58712
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	6400	5.0		µmhos/c	1	3/28/2019 11:33:05 AM	R58727
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	177.8	20.00		mg/L Ca	1	3/27/2019 12:20:28 PM	R58681
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	3/27/2019 12:20:28 PM	R58681
Total Alkalinity (as CaCO <sub>3</sub> )	177.8	20.00		mg/L Ca	1	3/27/2019 12:20:28 PM	R58681
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: KS
Total Dissolved Solids	5230	20.0	*	mg/L	1	3/29/2019 2:32:00 PM	43939
<b>SM4500-H+B / 9040C: PH</b>							Analyst: JRR
pH	6.99		H	pH units	1	3/27/2019 12:20:28 PM	R58681
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	3/29/2019 3:39:10 PM	B58763
Barium	0.014	0.0020		mg/L	1	3/29/2019 3:39:10 PM	B58763
Beryllium	ND	0.0020		mg/L	1	3/29/2019 3:39:10 PM	B58763
Boron	0.32	0.040		mg/L	1	3/29/2019 3:39:10 PM	B58763
Cadmium	ND	0.0020		mg/L	1	3/29/2019 3:39:10 PM	B58763
Calcium	940	10		mg/L	10	4/2/2019 11:53:49 AM	A58836
Chromium	ND	0.0060		mg/L	1	3/29/2019 3:39:10 PM	B58763
Cobalt	ND	0.0060		mg/L	1	3/29/2019 3:39:10 PM	B58763
Iron	0.048	0.020		mg/L	1	3/29/2019 3:39:10 PM	B58763
Magnesium	320	5.0		mg/L	5	3/29/2019 3:41:28 PM	B58763
Manganese	0.22	0.0020	*	mg/L	1	3/29/2019 3:39:10 PM	B58763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 3/21/2019 12:45:00 PM

Lab ID: 1903A97-001

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>ELS</b>
Molybdenum	ND	0.0080		mg/L	1	3/29/2019 3:39:10 PM	B58763
Nickel	ND	0.010		mg/L	1	3/29/2019 3:39:10 PM	B58763
Potassium	4.1	1.0		mg/L	1	3/29/2019 3:39:10 PM	B58763
Silver	0.011	0.0050		mg/L	1	3/29/2019 3:39:10 PM	B58763
Sodium	230	5.0		mg/L	5	3/29/2019 3:41:28 PM	B58763
Zinc	0.017	0.010		mg/L	1	3/29/2019 3:39:10 PM	B58763
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	3/27/2019 2:45:09 PM	43897
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>RAA</b>
Benzene	ND	1.0		µg/L	1	3/28/2019 12:18:00 PM	SL58723
Toluene	ND	1.0		µg/L	1	3/28/2019 12:18:00 PM	SL58723
Ethylbenzene	ND	1.0		µg/L	1	3/28/2019 12:18:00 PM	SL58723
Naphthalene	ND	2.0		µg/L	1	3/28/2019 12:18:00 PM	SL58723
Xylenes, Total	ND	1.5		µg/L	1	3/28/2019 12:18:00 PM	SL58723
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	3/28/2019 12:18:00 PM	SL58723
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	3/28/2019 12:18:00 PM	SL58723
Surr: Dibromofluoromethane	96.6	70-130		%Rec	1	3/28/2019 12:18:00 PM	SL58723
Surr: Toluene-d8	97.9	70-130		%Rec	1	3/28/2019 12:18:00 PM	SL58723

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 3/21/2019 1:25:00 AM

Lab ID: 1903A97-002

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: pmf
Antimony	ND	0.0010		mg/L	1	3/27/2019 11:08:19 AM	B58650
Arsenic	ND	0.0010		mg/L	1	3/27/2019 11:08:19 AM	B58650
Copper	0.0015	0.0010		mg/L	1	3/27/2019 11:08:19 AM	B58650
Lead	ND	0.00050		mg/L	1	3/27/2019 11:08:19 AM	B58650
Selenium	ND	0.010		mg/L	10	3/28/2019 6:46:07 PM	C58733
Thallium	ND	0.00050		mg/L	1	3/27/2019 11:08:19 AM	B58650
Uranium	ND	0.0050		mg/L	10	3/28/2019 6:46:07 PM	C58733
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: smb
Fluoride	0.87	0.10		mg/L	1	4/2/2019 1:13:29 AM	A58816
Chloride	1100	50		mg/L	100	3/29/2019 5:30:58 AM	A58712
Bromide	1.5	0.10		mg/L	1	3/29/2019 5:18:33 AM	A58712
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/29/2019 5:18:33 AM	A58712
Sulfate	1700	50		mg/L	100	3/29/2019 5:30:58 AM	A58712
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/29/2019 6:45:25 AM	A58712
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	5400	5.0		µmhos/c	1	3/28/2019 11:36:06 AM	R58727
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	144.7	20.00		mg/L Ca	1	3/27/2019 12:32:18 PM	R58681
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	3/27/2019 12:32:18 PM	R58681
Total Alkalinity (as CaCO <sub>3</sub> )	144.7	20.00		mg/L Ca	1	3/27/2019 12:32:18 PM	R58681
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: KS
Total Dissolved Solids	4170	20.0	*	mg/L	1	3/29/2019 2:32:00 PM	43939
<b>SM4500-H+B / 9040C: PH</b>							Analyst: JRR
pH	7.16		H	pH units	1	3/27/2019 12:32:18 PM	R58681
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	3/29/2019 3:43:50 PM	B58763
Barium	0.011	0.0020		mg/L	1	3/29/2019 3:43:50 PM	B58763
Beryllium	ND	0.0020		mg/L	1	3/29/2019 3:43:50 PM	B58763
Boron	0.16	0.040		mg/L	1	3/29/2019 3:43:50 PM	B58763
Cadmium	ND	0.0020		mg/L	1	3/29/2019 3:43:50 PM	B58763
Calcium	750	10		mg/L	10	4/2/2019 11:56:05 AM	A58836
Chromium	ND	0.0060		mg/L	1	3/29/2019 3:43:50 PM	B58763
Cobalt	ND	0.0060		mg/L	1	3/29/2019 3:43:50 PM	B58763
Iron	ND	0.020		mg/L	1	3/29/2019 3:43:50 PM	B58763
Magnesium	280	5.0		mg/L	5	3/29/2019 3:46:08 PM	B58763
Manganese	0.031	0.0020		mg/L	1	3/29/2019 3:43:50 PM	B58763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 3/21/2019 1:25:00 AM

Lab ID: 1903A97-002

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: ELS
Molybdenum	ND	0.0080		mg/L	1	3/29/2019 3:43:50 PM	B58763
Nickel	ND	0.010		mg/L	1	3/29/2019 3:43:50 PM	B58763
Potassium	3.5	1.0		mg/L	1	3/29/2019 3:43:50 PM	B58763
Silver	0.0092	0.0050		mg/L	1	3/29/2019 3:43:50 PM	B58763
Sodium	140	5.0		mg/L	5	3/29/2019 3:46:08 PM	B58763
Zinc	0.030	0.010		mg/L	1	3/29/2019 3:43:50 PM	B58763
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: rde
Mercury	ND	0.00020		mg/L	1	3/27/2019 2:47:28 PM	43897
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: RAA
Benzene	ND	1.0		µg/L	1	3/28/2019 1:31:00 PM	SL58723
Toluene	ND	1.0		µg/L	1	3/28/2019 1:31:00 PM	SL58723
Ethylbenzene	ND	1.0		µg/L	1	3/28/2019 1:31:00 PM	SL58723
Naphthalene	ND	2.0		µg/L	1	3/28/2019 1:31:00 PM	SL58723
Xylenes, Total	ND	1.5		µg/L	1	3/28/2019 1:31:00 PM	SL58723
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	3/28/2019 1:31:00 PM	SL58723
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	3/28/2019 1:31:00 PM	SL58723
Surr: Dibromofluoromethane	101	70-130		%Rec	1	3/28/2019 1:31:00 PM	SL58723
Surr: Toluene-d8	96.6	70-130		%Rec	1	3/28/2019 1:31:00 PM	SL58723

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 3/21/2019 2:10:00 PM

Lab ID: 1903A97-003

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: pmf
Antimony	ND	0.0010		mg/L	1	3/27/2019 11:10:56 AM	B58650
Arsenic	ND	0.0010		mg/L	1	3/27/2019 11:10:56 AM	B58650
Copper	ND	0.0010		mg/L	1	3/27/2019 11:10:56 AM	B58650
Lead	ND	0.00050		mg/L	1	3/27/2019 11:10:56 AM	B58650
Selenium	ND	0.010		mg/L	10	3/28/2019 6:48:44 PM	C58733
Thallium	ND	0.00050		mg/L	1	3/27/2019 11:10:56 AM	B58650
Uranium	ND	0.0050		mg/L	10	3/28/2019 6:48:44 PM	C58733
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: smb
Fluoride	1.6	0.10		mg/L	1	4/2/2019 1:25:53 AM	A58816
Chloride	47	25		mg/L	50	3/29/2019 5:55:47 AM	A58712
Bromide	0.12	0.10		mg/L	1	3/29/2019 5:43:22 AM	A58712
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/29/2019 5:43:22 AM	A58712
Sulfate	900	25		mg/L	50	3/29/2019 5:55:47 AM	A58712
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/29/2019 6:57:50 AM	A58712
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	1900	5.0		µmhos/c	1	3/28/2019 11:39:06 AM	R58727
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	175.8	20.00		mg/L Ca	1	3/27/2019 12:42:59 PM	R58681
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	3/27/2019 12:42:59 PM	R58681
Total Alkalinity (as CaCO <sub>3</sub> )	175.8	20.00		mg/L Ca	1	3/27/2019 12:42:59 PM	R58681
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: KS
Total Dissolved Solids	1610	20.0	*	mg/L	1	3/29/2019 2:32:00 PM	43939
<b>SM4500-H+B / 9040C: PH</b>							Analyst: JRR
pH	7.35		H	pH units	1	3/27/2019 12:42:59 PM	R58681
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	3/29/2019 4:01:40 PM	B58763
Barium	0.018	0.0020		mg/L	1	3/29/2019 4:01:40 PM	B58763
Beryllium	ND	0.0020		mg/L	1	3/29/2019 4:01:40 PM	B58763
Boron	0.11	0.040		mg/L	1	3/29/2019 4:01:40 PM	B58763
Cadmium	ND	0.0020		mg/L	1	3/29/2019 4:01:40 PM	B58763
Calcium	270	5.0		mg/L	5	3/29/2019 4:04:09 PM	B58763
Chromium	ND	0.0060		mg/L	1	3/29/2019 4:01:40 PM	B58763
Cobalt	ND	0.0060		mg/L	1	3/29/2019 4:01:40 PM	B58763
Iron	ND	0.020		mg/L	1	3/29/2019 4:01:40 PM	B58763
Magnesium	95	1.0		mg/L	1	3/29/2019 4:01:40 PM	B58763
Manganese	0.037	0.0020		mg/L	1	3/29/2019 4:01:40 PM	B58763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 3/21/2019 2:10:00 PM

Lab ID: 1903A97-003

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>ELS</b>
Molybdenum	0.0090	0.0080		mg/L	1	3/29/2019 4:01:40 PM	B58763
Nickel	ND	0.010		mg/L	1	3/29/2019 4:01:40 PM	B58763
Potassium	2.5	1.0		mg/L	1	3/29/2019 4:01:40 PM	B58763
Silver	ND	0.0050		mg/L	1	3/29/2019 4:01:40 PM	B58763
Sodium	34	1.0		mg/L	1	3/29/2019 4:01:40 PM	B58763
Zinc	0.027	0.010		mg/L	1	3/29/2019 4:01:40 PM	B58763
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	3/27/2019 2:49:39 PM	43897
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>RAA</b>
Benzene	ND	1.0		µg/L	1	3/28/2019 1:55:00 PM	SL58723
Toluene	ND	1.0		µg/L	1	3/28/2019 1:55:00 PM	SL58723
Ethylbenzene	ND	1.0		µg/L	1	3/28/2019 1:55:00 PM	SL58723
Naphthalene	ND	2.0		µg/L	1	3/28/2019 1:55:00 PM	SL58723
Xylenes, Total	ND	1.5		µg/L	1	3/28/2019 1:55:00 PM	SL58723
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	3/28/2019 1:55:00 PM	SL58723
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	3/28/2019 1:55:00 PM	SL58723
Surr: Dibromofluoromethane	98.2	70-130		%Rec	1	3/28/2019 1:55:00 PM	SL58723
Surr: Toluene-d8	96.5	70-130		%Rec	1	3/28/2019 1:55:00 PM	SL58723

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 3/21/2019 2:55:00 AM

Lab ID: 1903A97-004

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: pmf
Antimony	ND	0.0010		mg/L	1	3/27/2019 11:13:33 AM	B58650
Arsenic	ND	0.0010		mg/L	1	3/27/2019 11:13:33 AM	B58650
Copper	ND	0.0010		mg/L	1	3/27/2019 11:13:33 AM	B58650
Lead	ND	0.00050		mg/L	1	3/27/2019 11:13:33 AM	B58650
Selenium	0.013	0.010		mg/L	10	3/28/2019 6:56:39 PM	C58733
Thallium	ND	0.00050		mg/L	1	3/27/2019 11:13:33 AM	B58650
Uranium	0.0054	0.0050		mg/L	10	3/28/2019 6:56:39 PM	C58733
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: smb
Fluoride	1.0	0.10		mg/L	1	4/2/2019 1:38:17 AM	A58816
Chloride	810	25		mg/L	50	3/29/2019 6:20:36 AM	A58712
Bromide	1.1	0.10		mg/L	1	3/29/2019 6:08:12 AM	A58712
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/29/2019 6:08:12 AM	A58712
Sulfate	1100	25		mg/L	50	3/29/2019 6:20:36 AM	A58712
Nitrate+Nitrite as N	2.0	1.0		mg/L	5	3/29/2019 7:10:14 AM	A58712
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	3900	5.0		µmhos/c	1	3/28/2019 11:42:06 AM	R58727
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	146.8	20.00		mg/L Ca	1	3/27/2019 12:54:03 PM	R58681
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	3/27/2019 12:54:03 PM	R58681
Total Alkalinity (as CaCO <sub>3</sub> )	146.8	20.00		mg/L Ca	1	3/27/2019 12:54:03 PM	R58681
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: KS
Total Dissolved Solids	2920	20.0	*	mg/L	1	3/29/2019 2:32:00 PM	43939
<b>SM4500-H+B / 9040C: PH</b>							Analyst: JRR
pH	7.20		H	pH units	1	3/27/2019 12:54:03 PM	R58681
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: bcv
Aluminum	ND	0.020		mg/L	1	4/2/2019 11:58:21 AM	A58836
Barium	0.012	0.0020		mg/L	1	4/2/2019 11:58:21 AM	A58836
Beryllium	ND	0.0020		mg/L	1	4/2/2019 11:58:21 AM	A58836
Boron	0.067	0.040		mg/L	1	4/2/2019 11:58:21 AM	A58836
Cadmium	ND	0.0020		mg/L	1	4/2/2019 11:58:21 AM	A58836
Calcium	570	10		mg/L	10	4/2/2019 12:00:31 PM	A58836
Chromium	ND	0.0060		mg/L	1	4/2/2019 11:58:21 AM	A58836
Cobalt	ND	0.0060		mg/L	1	4/2/2019 11:58:21 AM	A58836
Iron	0.025	0.020		mg/L	1	4/2/2019 11:58:21 AM	A58836
Magnesium	170	10		mg/L	10	4/2/2019 12:00:31 PM	A58836
Manganese	0.0025	0.0020		mg/L	1	4/2/2019 11:58:21 AM	A58836

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## Analytical Report

Lab Order 1903A97

Date Reported: 4/18/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 3/21/2019 2:55:00 AM

Lab ID: 1903A97-004

Matrix: AQUEOUS

Received Date: 3/22/2019 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcb</b>
Molybdenum	ND	0.0080		mg/L	1	4/2/2019 11:58:21 AM	A58836
Nickel	ND	0.010		mg/L	1	4/2/2019 11:58:21 AM	A58836
Potassium	4.2	1.0		mg/L	1	4/2/2019 11:58:21 AM	A58836
Silver	0.0079	0.0050		mg/L	1	4/2/2019 11:58:21 AM	A58836
Sodium	85	1.0		mg/L	1	4/2/2019 11:58:21 AM	A58836
Zinc	0.022	0.010		mg/L	1	4/2/2019 11:58:21 AM	A58836
<b>EPA METHOD 245.1: MERCURY</b>							Analyst: <b>rde</b>
Mercury	ND	0.00020		mg/L	1	3/27/2019 2:51:51 PM	43897
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>RAA</b>
Benzene	ND	1.0		µg/L	1	3/28/2019 2:19:00 PM	SL58723
Toluene	ND	1.0		µg/L	1	3/28/2019 2:19:00 PM	SL58723
Ethylbenzene	ND	1.0		µg/L	1	3/28/2019 2:19:00 PM	SL58723
Naphthalene	ND	2.0		µg/L	1	3/28/2019 2:19:00 PM	SL58723
Xylenes, Total	ND	1.5		µg/L	1	3/28/2019 2:19:00 PM	SL58723
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	3/28/2019 2:19:00 PM	SL58723
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	3/28/2019 2:19:00 PM	SL58723
Surr: Dibromofluoromethane	99.1	70-130		%Rec	1	3/28/2019 2:19:00 PM	SL58723
Surr: Toluene-d8	98.2	70-130		%Rec	1	3/28/2019 2:19:00 PM	SL58723

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
	RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
	W	Sample container temperature is out of limit as specified at testcode		

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1 1903A97-001		MW-4 1903A97-002		MW-3 1903A97-003		MW-2 1903A97-004		
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sodium	230	10.00	140	6.09	34	1.48	85	3.70	
Potassium	4.1	0.10	3.5	0.09	2.5	0.05	4.2	0.11	
Calcium	940	46.91	750	37.43	270	13.47	570	28.44	
Magnesium	320	26.34	280	23.05	95	7.82	170	13.99	
<b>Total Cations</b>		<b>83.35</b>		<b>66.65</b>		<b>22.83</b>		<b>46.24</b>	
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sulfate	1600	33.31	1700	35.36	900	18.74	1100	22.90	
Chloride	1500	42.31	1100	31.03	47	1.33	810	22.85	
Bicarbonate (CaCO <sub>3</sub> )	177.8	3.55	144.7	2.89	175.8	3.51	145.8	2.93	
Phosphate (P)									
Nitrite (N)									
Nitrate (N)									
Fluoride	0.62	0.03	0.87	0.05	1.6	0.08	2.0	0.14	
Bromide	2.1	0.03	1.5	0.02	0.12	0.00	1.1	0.01	
<b>Total Anions</b>		<b>79.24</b>		<b>69.38</b>		<b>23.66</b>		<b>48.89</b>	
Elect. Cond. (µmhos/cm)	8400		5400		1900		3900		
<b>CATION/ANION RATIO</b>		<b>1.05</b>		<b>0.96</b>		<b>0.97</b>		<b>0.95</b>	
% Difference		<b>3</b>		<b>2</b>		<b>2</b>		<b>3</b>	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>									
TDS (measured)	5230		4170		1610		2920		
TDS (calculated)	4704		4063		1456		2838		
Ratio Meas. TDS:calc TDS		1.1		1.0		1.1		1.0	
Ratio Meas. TDS:EC		0.82		0.77		0.85		0.75	
Ratio Calc. TDS:EC		0.73		0.75		0.77		0.73	
Ratio of anion sum:EC		1.2		1.3		1.2		1.3	
Ratio of cation sum:EC		1.3		1.2		1.2		1.2	

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing/mg appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L-0.2 meq/L, 3-10 meq/L-2%, &gt;10 meq/L-5%

Ratio measured TDS:calculated TDS → 1.0-1.2. Ratio Calculated TDS:EC → 0.55-0.7. Ratio Measured TDS:EC → 0.55-0.7. Ratio of anion sum:EC → 0.9-1.1.

Ratio of cation sum:EC → 0.9-1.1



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB-B		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: PBW		Batch ID: B58763		RunNo: 58763						
Prep Date:		Analysis Date: 3/29/2019		SeqNo: 1974277		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: B58763		RunNo: 58763						
Prep Date:		Analysis Date: 3/29/2019		SeqNo: 1974279		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Calcium	52	1.0	50.00	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.7	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Magnesium	50	1.0	50.00	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	101	85	115			
Molybdenum	0.50	0.0080	0.5000	0	100	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Potassium	49	1.0	50.00	0	97.7	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	49	1.0	50.00	0	99.0	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: LCS-B	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: B58763	RunNo: 58763								
Prep Date:	Analysis Date: 3/29/2019	SeqNo: 1974279	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.52	0.010	0.5000	0	103	85	115			

Sample ID: MB-A	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: A58836	RunNo: 58836								
Prep Date:	Analysis Date: 4/2/2019	SeqNo: 1977253	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LCS-A	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: A58836	RunNo: 58836								
Prep Date:	Analysis Date: 4/2/2019	SeqNo: 1977255	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	107	85	115			
Barium	0.50	0.0020	0.5000	0	99.1	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Calcium	51	1.0	50.00	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	99.3	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.7	85	115			
Iron	0.50	0.020	0.5000	0	99.4	85	115			
Magnesium	51	1.0	50.00	0	101	85	115			

Qualifiers:

\*

Value exceeds Maximum Contaminant Level.

E

Value above quantitation range

ND

Not Detected at the Reporting Limit

RL

Reporting Detection Limit

W

Sample container temperature is out of limit as specified at testcode

B

Analyte detected in the associated Method Blank

H

Holding times for preparation or analysis exceeded

PQL

Practical Quantitative Limit

S

% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: LCS-A		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID: LCSW		Batch ID: A58836			RunNo: 58836					
Prep Date:		Analysis Date: 4/2/2019			SeqNo: 1977255		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.49	0.0020	0.5000	0	98.1	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.8	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Potassium	49	1.0	50.00	0	98.3	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	49	1.0	50.00	0	97.8	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Dissolved Metals								
Client ID: PBW	Batch ID: B58650	RunNo: 58650								
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970397 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								

Sample ID: LCS	SampType: LCS	TestCode: EPA 200.8: Dissolved Metals								
Client ID: LCSW	Batch ID: B58650	RunNo: 58650								
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970401 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.9	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.6	85	115			
Copper	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Thallium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Dissolved Metals								
Client ID: PBW	Batch ID: C58650	RunNo: 58650								
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970435 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Thallium	ND	0.00050								

Sample ID: LCS	SampType: LCS	TestCode: EPA 200.8: Dissolved Metals								
Client ID: LCSW	Batch ID: C58650	RunNo: 58650								
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970437 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.0	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.026	0.0010	0.02500	0	105	85	115			
Thallium	0.014	0.00050	0.01250	0	109	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
W	Sample container temperature is out of limit as specified at testcode		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Dissolved Metals
Client ID: PBW	Batch ID: C58733	RunNo: 58733
Prep Date:	Analysis Date: 3/28/2019	SeqNo: 1973010 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Lead	ND	0.00050
Selenium	ND	0.0010
Uranium	ND	0.00050

Sample ID: LCS	SampType: LCS	TestCode: EPA 200.8: Dissolved Metals
Client ID: LCSW	Batch ID: C58733	RunNo: 58733
Prep Date:	Analysis Date: 3/28/2019	SeqNo: 1973012 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Lead	0.012	0.00050	0.01250	0	99.7	85	115
Selenium	0.024	0.0010	0.02500	0	94.2	85	115
Uranium	0.013	0.00050	0.01250	0	101	85	115

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	PQL	Practical Quantitative Limit
RL	Reporting Detection Limit	S	% Recovery outside of range due to dilution or matrix
W	Sample container temperature is out of limit as specified at testcode		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB-43897	SampType: MBLK	TestCode: EPA Method 245.1: Mercury
Client ID: PBW	Batch ID: 43897	RunNo: 58674
Prep Date: 3/26/2019	Analysis Date: 3/27/2019	SeqNo: 1970323 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Mercury	ND 0.00020	

Sample ID: LCS-43897	SampType: LCS	TestCode: EPA Method 245.1: Mercury
Client ID: LCSW	Batch ID: 43897	RunNo: 58674
Prep Date: 3/26/2019	Analysis Date: 3/27/2019	SeqNo: 1970324 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Mercury	0.0049 0.00020 0.005000 0 98.0 80 120	

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- ND

Not Detected at the Reporting Limit
- RL

Reporting Detection Limit
- W

Sample container temperature is out of limit as specified at testcode
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1903A97

18-Apr-19

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>A58712</b>	RunNo: <b>58712</b>								
Prep Date:	Analysis Date: <b>3/28/2019</b>	SeqNo: <b>1973480</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>A58712</b>	RunNo: <b>58712</b>								
Prep Date:	Analysis Date: <b>3/28/2019</b>	SeqNo: <b>1973481</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.9	90	110			
Bromide	2.5	0.10	2.500	0	98.8	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	101	90	110			
Sulfate	10	0.50	10.00	0	99.7	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	0	102	90	110			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>A58816</b>	RunNo: <b>58816</b>								
Prep Date:	Analysis Date: <b>4/1/2019</b>	SeqNo: <b>1976786</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>A58816</b>	RunNo: <b>58816</b>								
Prep Date:	Analysis Date: <b>4/2/2019</b>	SeqNo: <b>1976787</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	110	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: SL58723	RunNo: 58723								
Prep Date:	Analysis Date: 3/28/2019	SeqNo: 1972445	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.3	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.9	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Sample ID: rb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: SL58723	RunNo: 58723								
Prep Date:	Analysis Date: 3/28/2019	SeqNo: 1972446	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.2	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: lcs-1 99.0uS eC		SampType: LCS		TestCode: SM2510B: Specific Conductance						
Client ID: LCSW		Batch ID: R58727		RunNo: 58727						
Prep Date:		Analysis Date: 3/28/2019		SeqNo: 1972652		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.00	0	101	85	115			

Sample ID: lcsd-1 99.0uS eC		SampType: LCSD		TestCode: SM2510B: Specific Conductance						
Client ID: LCSS02		Batch ID: R58727		RunNo: 58727						
Prep Date:		Analysis Date: 3/28/2019		SeqNo: 1972653		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.00	0	101	8085	115	0.100	0	S

Qualifiers:

\*

E

ND

RL

W

Value exceeds Maximum Contaminant Level.

Value above quantitation range

Not Detected at the Reporting Limit

Reporting Detection Limit

Sample container temperature is out of limit as specified at testcode

B

H

PQL

S

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

Practical Quantitative Limit

% Recovery outside of range due to dilution or matrix



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: mb-1 alk	SampType: MBLK	TestCode: SM2320B: Alkalinity
Client ID: PBW	Batch ID: R58681	RunNo: 58681
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970642 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	ND	20.00

Sample ID: lcs-1 alk	SampType: LCS	TestCode: SM2320B: Alkalinity
Client ID: LCSW	Batch ID: R58681	RunNo: 58681
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970643 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	77.08	20.00 80.00 0 96.4 90 110

Sample ID: lcsd-1 alk	SampType: LCSD	TestCode: SM2320B: Alkalinity
Client ID: LCSS02	Batch ID: R58681	RunNo: 58681
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970644 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	77.12	20.00 80.00 0 96.4 90 110 0.0519 20

Sample ID: mb-2 alk	SampType: MBLK	TestCode: SM2320B: Alkalinity
Client ID: PBW	Batch ID: R58681	RunNo: 58681
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970666 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	ND	20.00

Sample ID: lcs-2 alk	SampType: LCS	TestCode: SM2320B: Alkalinity
Client ID: LCSW	Batch ID: R58681	RunNo: 58681
Prep Date:	Analysis Date: 3/27/2019	SeqNo: 1970667 Units: mg/L CaCO3
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO3)	77.24	20.00 80.00 0 96.6 90 110

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

Page 18 of 19

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1903A97  
18-Apr-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB-43939	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 43939	RunNo: 58749								
Prep Date: 3/28/2019	Analysis Date: 3/29/2019	SeqNo: 1973911		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-43939	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 43939	RunNo: 58749								
Prep Date: 3/28/2019	Analysis Date: 3/29/2019	SeqNo: 1973912		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- E

Value above quantitation range
- ND

Not Detected at the Reporting Limit
- RL

Reporting Detection Limit
- W

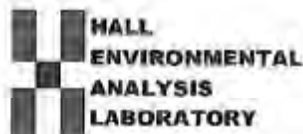
Sample container temperature is out of limit as specified at testcode
- B

Analyte detected in the associated Method Blank
- H

Holding times for preparation or analysis exceeded
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix



Hall Environmental Analysis Laboratory  
4961 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Safety Env Solutions

Work Order Number: 1903A97

Rep/No: 1

Received By: Desiree Dominguez 3/22/2019 9:05:00 AM

Completed By: Victoria Zellar 3/22/2019 12:45:14 PM

Reviewed By: DAD 3/22/19

*DS*

*Victoria Zellar*

*Labeled by LS*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ No: Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $\geq 0^{\circ}\text{C}$  to  $6^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: (12)  
( $<2$  or  $\geq 12$  unless noted)  
Adjusted? NU  
Checked by: LS

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
By Whom: \_\_\_\_\_ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
Regarding: \_\_\_\_\_  
Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

November 19, 2019

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL:  
FAX:

RE: Lattion Pit

OrderNo.: 1910E46

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/29/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 10/28/2019 9:15:00 AM

Lab ID: 1910E46-001

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>ELS</b>
Antimony	ND	0.0050		mg/L	5	11/6/2019 4:01:06 PM	A64277
Arsenic	ND	0.0050		mg/L	5	11/6/2019 4:01:06 PM	A64277
Copper	ND	0.0050		mg/L	5	11/6/2019 4:01:06 PM	A64277
Lead	ND	0.0025		mg/L	5	11/6/2019 4:01:06 PM	A64277
Selenium	ND	0.0050		mg/L	5	11/6/2019 4:01:06 PM	A64277
Thallium	ND	0.0025		mg/L	5	11/6/2019 4:01:06 PM	A64277
Uranium	ND	0.0025		mg/L	5	11/6/2019 4:01:06 PM	A64277
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Fluoride	1.0	0.50		mg/L	5	10/30/2019 7:18:36 PM	R64113
Chloride	1500	50		mg/L	100	10/30/2019 7:57:17 PM	R64113
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	10/29/2019 9:15:03 PM	R64065
Bromide	2.0	0.10		mg/L	1	10/29/2019 9:02:39 PM	R64065
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	10/29/2019 9:02:39 PM	R64065
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	10/29/2019 9:02:39 PM	R64065
Sulfate	1600	50		mg/L	100	10/30/2019 7:57:17 PM	R64113
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	6900	5.0		µmhos/c	1	10/30/2019 5:15:05 PM	R64112
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO <sub>3</sub> )	168.6	20.00		mg/L Ca	1	10/30/2019 5:15:05 PM	R64112
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	10/30/2019 5:15:05 PM	R64112
Total Alkalinity (as CaCO <sub>3</sub> )	168.6	20.00		mg/L Ca	1	10/30/2019 5:15:05 PM	R64112
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>JMT</b>
Total Dissolved Solids	5550	200	*D	mg/L	1	10/31/2019 3:28:00 PM	48488
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	7.39		H	pH units	1	10/30/2019 5:15:05 PM	R64112
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcv</b>
Aluminum	ND	0.020		mg/L	1	11/12/2019 6:19:43 PM	A64454
Barium	0.018	0.0020		mg/L	1	11/12/2019 6:19:43 PM	A64454
Beryllium	ND	0.0020		mg/L	1	11/12/2019 6:19:43 PM	A64454
Boron	0.35	0.040		mg/L	1	11/12/2019 6:19:43 PM	A64454
Cadmium	ND	0.0020		mg/L	1	11/12/2019 6:19:43 PM	A64454
Calcium	920	20		mg/L	20	11/12/2019 6:23:59 PM	A64454
Chromium	ND	0.0060		mg/L	1	11/12/2019 6:19:43 PM	A64454
Cobalt	ND	0.0060		mg/L	1	11/12/2019 6:19:43 PM	A64454
Iron	ND	0.020		mg/L	1	11/12/2019 6:19:43 PM	A64454
Magnesium	330	5.0		mg/L	5	11/12/2019 6:21:55 PM	A64454

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Page 1 of 17



## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 10/28/2019 9:15:00 AM

Lab ID: 1910E46-001

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcv</b>
Manganese	0.14	0.0020	*	mg/L	1	11/12/2019 6:19:43 PM	A64454
Molybdenum	ND	0.0080		mg/L	1	11/12/2019 6:19:43 PM	A64454
Nickel	ND	0.010		mg/L	1	11/12/2019 6:19:43 PM	A64454
Potassium	4.3	1.0		mg/L	1	11/12/2019 6:19:43 PM	A64454
Silver	0.016	0.0050		mg/L	1	11/12/2019 6:19:43 PM	A64454
Sodium	230	5.0		mg/L	5	11/12/2019 6:21:55 PM	A64454
Zinc	0.046	0.010		mg/L	1	11/12/2019 6:19:43 PM	A64454
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>JMR</b>
Benzene	ND	1.0		µg/L	1	10/31/2019 7:12:50 PM	SL64147
Toluene	ND	1.0		µg/L	1	10/31/2019 7:12:50 PM	SL64147
Ethylbenzene	ND	1.0		µg/L	1	10/31/2019 7:12:50 PM	SL64147
Naphthalene	ND	2.0		µg/L	1	10/31/2019 7:12:50 PM	SL64147
1-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 7:12:50 PM	SL64147
2-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 7:12:50 PM	SL64147
Xylenes, Total	ND	1.5		µg/L	1	10/31/2019 7:12:50 PM	SL64147
Surr: 1,2-Dichloroethane-d4	94.9	70-130		%Rec	1	10/31/2019 7:12:50 PM	SL64147
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	10/31/2019 7:12:50 PM	SL64147
Surr: Dibromofluoromethane	101	70-130		%Rec	1	10/31/2019 7:12:50 PM	SL64147
Surr: Toluene-d8	96.4	70-130		%Rec	1	10/31/2019 7:12:50 PM	SL64147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 10/28/2019 9:50:00 AM

Lab ID: 1910E46-002

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>ELS</b>
Antimony	ND	0.0050		mg/L	5	11/6/2019 4:08:59 PM	A64277
Arsenic	ND	0.0050		mg/L	5	11/6/2019 4:08:59 PM	A64277
Copper	ND	0.0050		mg/L	5	11/6/2019 4:08:59 PM	A64277
Lead	ND	0.0025		mg/L	5	11/6/2019 4:08:59 PM	A64277
Selenium	ND	0.0050		mg/L	5	11/6/2019 4:08:59 PM	A64277
Thallium	ND	0.0025		mg/L	5	11/6/2019 4:08:59 PM	A64277
Uranium	ND	0.0025		mg/L	5	11/6/2019 4:08:59 PM	A64277
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Fluoride	1.2	0.50		mg/L	5	10/30/2019 8:10:08 PM	R64113
Chloride	990	50		mg/L	100	10/30/2019 8:23:00 PM	R64113
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	10/29/2019 9:39:52 PM	R64065
Bromide	1.5	0.10		mg/L	1	10/29/2019 9:27:28 PM	R64065
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	10/29/2019 9:27:28 PM	R64065
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	10/29/2019 9:27:28 PM	R64065
Sulfate	1500	50		mg/L	100	10/30/2019 8:23:00 PM	R64113
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	5500	5.0		µmhos/c	1	10/30/2019 5:26:22 PM	R64112
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO <sub>3</sub> )	147.6	20.00		mg/L Ca	1	10/30/2019 5:26:22 PM	R64112
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	10/30/2019 5:26:22 PM	R64112
Total Alkalinity (as CaCO <sub>3</sub> )	147.6	20.00		mg/L Ca	1	10/30/2019 5:26:22 PM	R64112
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>JMT</b>
Total Dissolved Solids	4200	40.0	*D	mg/L	1	10/31/2019 3:28:00 PM	48488
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	7.46		H	pH units	1	10/30/2019 5:26:22 PM	R64112
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcv</b>
Aluminum	ND	0.020		mg/L	1	11/12/2019 6:26:14 PM	A64454
Barium	0.012	0.0020		mg/L	1	11/8/2019 4:48:10 PM	C64376
Beryllium	0.0023	0.0020		mg/L	1	11/8/2019 4:48:10 PM	C64376
Boron	0.17	0.040		mg/L	1	11/8/2019 4:48:10 PM	C64376
Cadmium	ND	0.0020		mg/L	1	11/12/2019 6:26:14 PM	A64454
Calcium	720	10		mg/L	10	11/12/2019 6:30:40 PM	A64454
Chromium	ND	0.0060		mg/L	1	11/8/2019 4:48:10 PM	C64376
Cobalt	ND	0.0060		mg/L	1	11/8/2019 4:48:10 PM	C64376
Iron	ND	0.020		mg/L	1	11/8/2019 4:48:10 PM	C64376
Magnesium	250	5.0		mg/L	5	11/8/2019 4:50:29 PM	C64376

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

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## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 10/28/2019 9:50:00 AM

Lab ID: 1910E46-002

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcv</b>
Manganese	0.032	0.0020		mg/L	1	11/8/2019 4:48:10 PM	C64376
Molybdenum	ND	0.0080		mg/L	1	11/8/2019 4:48:10 PM	C64376
Nickel	ND	0.010		mg/L	1	11/8/2019 4:48:10 PM	C64376
Potassium	3.6	1.0		mg/L	1	11/8/2019 4:48:10 PM	C64376
Silver	0.019	0.0050		mg/L	1	11/8/2019 4:48:10 PM	C64376
Sodium	130	5.0		mg/L	5	11/12/2019 6:28:26 PM	A64454
Zinc	0.023	0.010		mg/L	1	11/8/2019 4:48:10 PM	C64376
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>JMR</b>
Benzene	ND	1.0		µg/L	1	10/31/2019 7:41:31 PM	SL64147
Toluene	ND	1.0		µg/L	1	10/31/2019 7:41:31 PM	SL64147
Ethylbenzene	ND	1.0		µg/L	1	10/31/2019 7:41:31 PM	SL64147
Naphthalene	ND	2.0		µg/L	1	10/31/2019 7:41:31 PM	SL64147
1-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 7:41:31 PM	SL64147
2-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 7:41:31 PM	SL64147
Xylenes, Total	ND	1.5		µg/L	1	10/31/2019 7:41:31 PM	SL64147
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%Rec	1	10/31/2019 7:41:31 PM	SL64147
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	10/31/2019 7:41:31 PM	SL64147
Surr: Dibromofluoromethane	102	70-130		%Rec	1	10/31/2019 7:41:31 PM	SL64147
Surr: Toluene-d8	96.7	70-130		%Rec	1	10/31/2019 7:41:31 PM	SL64147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 10/28/2019 10:35:00 AM

Lab ID: 1910E46-003

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: ELS
Antimony	ND	0.0050		mg/L	5	11/6/2019 4:11:37 PM	A64277
Arsenic	ND	0.0050		mg/L	5	11/6/2019 4:11:37 PM	A64277
Copper	ND	0.0050		mg/L	5	11/6/2019 4:11:37 PM	A64277
Lead	ND	0.0025		mg/L	5	11/6/2019 4:11:37 PM	A64277
Selenium	ND	0.0050		mg/L	5	11/6/2019 4:11:37 PM	A64277
Thallium	ND	0.0025		mg/L	5	11/6/2019 4:11:37 PM	A64277
Uranium	ND	0.0025		mg/L	5	11/6/2019 4:11:37 PM	A64277
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Fluoride	1.6	0.50		mg/L	5	10/29/2019 10:17:07 PM	R64065
Chloride	45	2.5		mg/L	5	10/29/2019 10:17:07 PM	R64065
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	10/29/2019 10:17:07 PM	R64065
Bromide	ND	0.50		mg/L	5	10/29/2019 10:17:07 PM	R64065
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	10/29/2019 10:17:07 PM	R64065
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	10/29/2019 10:17:07 PM	R64065
Sulfate	870	10		mg/L	20	10/29/2019 10:29:33 PM	R64065
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	1900	5.0		µmhos/c	1	10/30/2019 5:36:39 PM	R64112
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	182.6	20.00		mg/L Ca	1	10/30/2019 5:36:39 PM	R64112
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	10/30/2019 5:36:39 PM	R64112
Total Alkalinity (as CaCO <sub>3</sub> )	182.6	20.00		mg/L Ca	1	10/30/2019 5:36:39 PM	R64112
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: JMT
Total Dissolved Solids	1590	20.0	*	mg/L	1	10/31/2019 3:28:00 PM	48488
<b>SM4500-H+B / 9040C: PH</b>							Analyst: JRR
pH	7.73		H	pH units	1	10/30/2019 5:36:39 PM	R64112
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: bcv
Aluminum	ND	0.020		mg/L	1	11/12/2019 6:39:40 PM	A64454
Barium	0.018	0.0020		mg/L	1	11/8/2019 5:00:19 PM	C64376
Beryllium	ND	0.0020		mg/L	1	11/8/2019 5:00:19 PM	C64376
Boron	0.11	0.040		mg/L	1	11/8/2019 5:00:19 PM	C64376
Cadmium	ND	0.0020		mg/L	1	11/12/2019 6:39:40 PM	A64454
Calcium	240	5.0		mg/L	5	11/8/2019 5:02:25 PM	C64376
Chromium	ND	0.0060		mg/L	1	11/8/2019 5:00:19 PM	C64376
Cobalt	ND	0.0060		mg/L	1	11/8/2019 5:00:19 PM	C64376
Iron	ND	0.020		mg/L	1	11/12/2019 6:39:40 PM	A64454
Magnesium	100	10		mg/L	10	11/15/2019 11:25:30 AM	A64544

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

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## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 10/28/2019 10:35:00 AM

Lab ID: 1910E46-003

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcv</b>
Manganese	0.012	0.0020		mg/L	1	11/8/2019 5:00:19 PM	C64376
Molybdenum	ND	0.0080		mg/L	1	11/8/2019 5:00:19 PM	C64376
Nickel	ND	0.010		mg/L	1	11/8/2019 5:00:19 PM	C64376
Potassium	2.8	1.0		mg/L	1	11/8/2019 5:00:19 PM	C64376
Silver	0.0071	0.0050		mg/L	1	11/8/2019 5:00:19 PM	C64376
Sodium	34	1.0		mg/L	1	11/12/2019 6:39:40 PM	A64454
Zinc	0.068	0.010		mg/L	1	11/8/2019 5:00:19 PM	C64376
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>JMR</b>
Benzene	ND	1.0		µg/L	1	10/31/2019 8:10:08 PM	SL64147
Toluene	ND	1.0		µg/L	1	10/31/2019 8:10:08 PM	SL64147
Ethylbenzene	ND	1.0		µg/L	1	10/31/2019 8:10:08 PM	SL64147
Naphthalene	ND	2.0		µg/L	1	10/31/2019 8:10:08 PM	SL64147
1-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 8:10:08 PM	SL64147
2-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 8:10:08 PM	SL64147
Xylenes, Total	ND	1.5		µg/L	1	10/31/2019 8:10:08 PM	SL64147
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%Rec	1	10/31/2019 8:10:08 PM	SL64147
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	10/31/2019 8:10:08 PM	SL64147
Surr: Dibromofluoromethane	102	70-130		%Rec	1	10/31/2019 8:10:08 PM	SL64147
Surr: Toluene-d8	98.7	70-130		%Rec	1	10/31/2019 8:10:08 PM	SL64147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 10/28/2019 11:20:00 AM

Lab ID: 1910E46-004

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: ELS
Antimony	ND	0.0050		mg/L	5	11/6/2019 4:14:15 PM	A64277
Arsenic	ND	0.0050		mg/L	5	11/6/2019 4:14:15 PM	A64277
Copper	ND	0.0050		mg/L	5	11/6/2019 4:14:15 PM	A64277
Lead	ND	0.0025		mg/L	5	11/6/2019 4:14:15 PM	A64277
Selenium	0.018	0.0050		mg/L	5	11/6/2019 4:14:15 PM	A64277
Thallium	ND	0.0025		mg/L	5	11/6/2019 4:14:15 PM	A64277
Uranium	0.0058	0.0025		mg/L	5	11/6/2019 4:14:15 PM	A64277
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Fluoride	0.87	0.50		mg/L	5	10/29/2019 10:41:57 PM	R64065
Chloride	800	25		mg/L	50	10/30/2019 8:35:51 PM	R64113
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	10/29/2019 10:41:57 PM	R64065
Bromide	1.2	0.50		mg/L	5	10/29/2019 10:41:57 PM	R64065
Nitrogen, Nitrate (As N)	2.6	0.50		mg/L	5	10/29/2019 10:41:57 PM	R64065
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	10/29/2019 10:41:57 PM	R64065
Sulfate	1000	25		mg/L	50	10/30/2019 8:35:51 PM	R64113
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	4300	5.0		µmhos/c	1	10/30/2019 5:47:28 PM	R64112
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	150.7	20.00		mg/L Ca	1	10/30/2019 5:47:28 PM	R64112
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L Ca	1	10/30/2019 5:47:28 PM	R64112
Total Alkalinity (as CaCO <sub>3</sub> )	150.7	20.00		mg/L Ca	1	10/30/2019 5:47:28 PM	R64112
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: JMT
Total Dissolved Solids	3110	40.0	*D	mg/L	1	10/31/2019 3:28:00 PM	48488
<b>SM4500-H+B / 9040C: PH</b>							Analyst: JRR
pH	7.52		H	pH units	1	10/30/2019 5:47:28 PM	R64112
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: bcv
Aluminum	ND	0.020		mg/L	1	11/12/2019 6:41:47 PM	A64454
Barium	0.012	0.0020		mg/L	1	11/8/2019 5:04:28 PM	C64376
Beryllium	ND	0.0020		mg/L	1	11/8/2019 5:04:28 PM	C64376
Boron	0.067	0.040		mg/L	1	11/8/2019 5:04:28 PM	C64376
Cadmium	ND	0.0020		mg/L	1	11/12/2019 6:41:47 PM	A64454
Calcium	600	10		mg/L	10	11/12/2019 6:46:13 PM	A64454
Chromium	ND	0.0060		mg/L	1	11/8/2019 5:04:28 PM	C64376
Cobalt	ND	0.0060		mg/L	1	11/8/2019 5:04:28 PM	C64376
Iron	0.026	0.020		mg/L	1	11/12/2019 6:41:47 PM	A64454
Magnesium	190	5.0		mg/L	5	11/12/2019 6:43:58 PM	A64454

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit



## Analytical Report

Lab Order 1910E46

Date Reported: 11/19/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 10/28/2019 11:20:00 AM

Lab ID: 1910E46-004

Matrix: AQUEOUS

Received Date: 10/29/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>bcv</b>
Manganese	ND	0.0020		mg/L	1	11/8/2019 5:04:28 PM	C64376
Molybdenum	ND	0.0080		mg/L	1	11/8/2019 5:04:28 PM	C64376
Nickel	ND	0.010		mg/L	1	11/8/2019 5:04:28 PM	C64376
Potassium	4.5	1.0		mg/L	1	11/8/2019 5:04:28 PM	C64376
Silver	0.015	0.0050		mg/L	1	11/8/2019 5:04:28 PM	C64376
Sodium	94	1.0		mg/L	1	11/12/2019 6:41:47 PM	A64454
Zinc	0.031	0.010		mg/L	1	11/8/2019 5:04:28 PM	C64376
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>JMR</b>
Benzene	ND	1.0		µg/L	1	10/31/2019 8:38:43 PM	SL64147
Toluene	ND	1.0		µg/L	1	10/31/2019 8:38:43 PM	SL64147
Ethylbenzene	ND	1.0		µg/L	1	10/31/2019 8:38:43 PM	SL64147
Naphthalene	ND	2.0		µg/L	1	10/31/2019 8:38:43 PM	SL64147
1-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 8:38:43 PM	SL64147
2-Methylnaphthalene	ND	4.0		µg/L	1	10/31/2019 8:38:43 PM	SL64147
Xylenes, Total	ND	1.5		µg/L	1	10/31/2019 8:38:43 PM	SL64147
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	10/31/2019 8:38:43 PM	SL64147
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	10/31/2019 8:38:43 PM	SL64147
Surr: Dibromofluoromethane	103	70-130		%Rec	1	10/31/2019 8:38:43 PM	SL64147
Surr: Toluene-d8	99.6	70-130		%Rec	1	10/31/2019 8:38:43 PM	SL64147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MWV-1		MWV-4		MWV-3		MWV-2			
	1910E46-001		1910E46-002		1910E46-003		1910E46-004			
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sodium	230	10.00	130	5.65	34	1.48	94	4.09		
Potassium	4.3	0.11	3.6	0.09	2.8	0.07	4.5	0.12		
Calcium	920	45.91	720	35.93	240	11.98	600	29.94		
Magnesium	330	27.16	250	20.58	100	8.23	190.0	15.64		
Total Cations		83.18		62.25		21.76		49.78		
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sulfate	1600	33.31	1500	31.23	870	18.11	1000	20.82		
Chloride	1500	42.31	990	27.93	45	1.27	800	22.57		
Bicarbonate (CaCO <sub>3</sub> )	168.6	3.37	147.6	2.95	182.6	3.65	150.7	3.01		
Carbonate (CaCO <sub>3</sub> )										
Phosphate (P)										
Nitrite (N)										
Nitrate (N)										
Fluoride	1.0	0.05	1.2	0.06	-		2.6	0.19		
Bromide	2.0	0.03	1.5	0.02	1.6	0.08	0.87	0.05		
Total Anions		79.07		62.19		23.12		46.65		
Elect. Cond. (µMhos/cm)	6900		5500		1900		4300			
CATION/ANION RATIO		1.05		1.00		0.94		1.07		
% Difference		3		0		3		3		
TOTAL DISSOLVED SOLIDS RATIOS										
TDS (measured)	5550		4200		1590		3110			
TDS (calculated)	4688		3685		1403		2793			
Ratio meas TDS:calc TDS		1.2		1.1		1.1		1.1		
Ratio Meas. TDS:EC		0.80		0.76		0.84		0.72		
Ratio Calc. TDS:EC		0.68		0.67		0.74		0.65		
Ratio of anion sum:EC		1.1		1.1		1.2		1.1		
Ratio of cation sum:EC		1.2		1.1		1.1		1.2		

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

## GENERALLY ACCEPTED RANGES

Cation/Anion balance: 0-3 meq/L-0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46

19-Nov-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: C64376	RunNo: 64376								
Prep Date:	Analysis Date: 11/8/2019	SeqNo: 2203479	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: C64376	RunNo: 64376								
Prep Date:	Analysis Date: 11/8/2019	SeqNo: 2203481	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	103	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Boron	0.50	0.040	0.5000	0	99.5	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Iron	0.44	0.020	0.5000	0	87.9	85	115			
Magnesium	47	1.0	50.00	0	93.6	85	115			
Manganese	0.49	0.0020	0.5000	0	98.6	85	115			
Molybdenum	0.52	0.0080	0.5000	0	103	85	115			
Nickel	0.49	0.010	0.5000	0	97.7	85	115			
Potassium	51	1.0	50.00	0	103	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			
Zinc	0.53	0.010	0.5000	0	105	85	115			

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: A64454	RunNo: 64454								
Prep Date:	Analysis Date: 11/12/2019	SeqNo: 2206533	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 9 of 17



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46  
19-Nov-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB		SampType: MBLK				TestCode: EPA Method 200.7: Dissolved Metals				
Client ID: PBW		Batch ID: A64454				RunNo: 64454				
Prep Date:		Analysis Date: 11/12/2019				SeqNo: 2206533		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LCS		SampType: LCS				TestCode: EPA Method 200.7: Dissolved Metals				
Client ID: LCSW		Batch ID: A64454				RunNo: 64454				
Prep Date:		Analysis Date: 11/12/2019				SeqNo: 2206535		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.50	0.0020	0.5000	0	99.7	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.8	85	115			
Boron	0.50	0.040	0.5000	0	99.4	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Calcium	48	1.0	50.00	0	96.9	85	115			
Chromium	0.49	0.0060	0.5000	0	98.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.5	85	115			
Iron	0.49	0.020	0.5000	0	97.5	85	115			
Magnesium	49	1.0	50.00	0	97.4	85	115			
Manganese	0.48	0.0020	0.5000	0	96.6	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.7	85	115			
Nickel	0.49	0.010	0.5000	0	98.5	85	115			
Potassium	48	1.0	50.00	0	95.9	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Sodium	48	1.0	50.00	0	96.7	85	115			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46

19-Nov-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A64454		RunNo: 64454							
Prep Date:	Analysis Date: 11/12/2019		SeqNo: 2206535		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.49	0.010	0.5000	0	97.4	85	115			

Sample ID: MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A64544		RunNo: 64544							
Prep Date:	Analysis Date: 11/15/2019		SeqNo: 2210119		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0								

Sample ID: LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A64544		RunNo: 64544							
Prep Date:	Analysis Date: 11/15/2019		SeqNo: 2210121		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	50	1.0	50.00	0	99.4	85	115			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46

19-Nov-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW		Batch ID: A64277		RunNo: 64277						
Prep Date:		Analysis Date: 11/6/2019		SeqNo: 2199835		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								
Uranium	ND	0.00050								

Sample ID: LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW		Batch ID: A64277		RunNo: 64277						
Prep Date:		Analysis Date: 11/6/2019		SeqNo: 2199839		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.6	85	115			
Copper	0.025	0.0010	0.02500	0	99.6	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.024	0.0010	0.02500	0	97.3	85	115			
Thallium	0.013	0.00050	0.01250	0	101	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46

19-Nov-19

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R64065</b>	RunNo: <b>64065</b>								
Prep Date:	Analysis Date: <b>10/29/2019</b>	SeqNo: <b>2191872</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R64065</b>	RunNo: <b>64065</b>								
Prep Date:	Analysis Date: <b>10/29/2019</b>	SeqNo: <b>2191873</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	103	90	110			
Chloride	4.7	0.50	5.000	0	94.4	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.1	90	110			
Bromide	2.4	0.10	2.500	0	96.9	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.8	90	110			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	93.3	90	110			
Sulfate	9.5	0.50	10.00	0	95.3	90	110			

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R64113</b>	RunNo: <b>64113</b>								
Prep Date:	Analysis Date: <b>10/30/2019</b>	SeqNo: <b>2193994</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS-B</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R64113</b>	RunNo: <b>64113</b>								
Prep Date:	Analysis Date: <b>10/30/2019</b>	SeqNo: <b>2193998</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			
Sulfate	9.7	0.50	10.00	0	97.2	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 13 of 17

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46

19-Nov-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: SL64147	RunNo: 64147								
Prep Date:	Analysis Date: 10/31/2019	SeqNo: 2195054	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.9	70	130			
Toluene	19	1.0	20.00	0	93.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.7	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.0	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.5		10.00		95.0	70	130			

Sample ID: rb1	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: SL64147	RunNo: 64147								
Prep Date:	Analysis Date: 10/31/2019	SeqNo: 2195074	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.8	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		93.6	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.8		10.00		97.6	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46

19-Nov-19

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: Ics-1 99.8uS eC		SampType: Ics		TestCode: SM2510B: Specific Conductance						
Client ID: LCSW		Batch ID: R64112		RunNo: 64112						
Prep Date:		Analysis Date: 10/30/2019		SeqNo: 2193922		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.80	0	102	85	115			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1910E46

19-Nov-19

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>mb-1 alk</b>	SampType: <b>mbk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R64112</b>	RunNo: <b>64112</b>								
Prep Date:	Analysis Date: <b>10/30/2019</b>	SeqNo: <b>2193872</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-1 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R64112</b>	RunNo: <b>64112</b>								
Prep Date:	Analysis Date: <b>10/30/2019</b>	SeqNo: <b>2193873</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.72	20.00	80.00	0	98.4	90	110			

Sample ID: <b>lcs-2 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R64112</b>	RunNo: <b>64112</b>								
Prep Date:	Analysis Date: <b>10/30/2019</b>	SeqNo: <b>2193897</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.24	20.00	80.00	0	100	90	110			

Sample ID: <b>mb-2 alk</b>	SampType: <b>mbk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R64112</b>	RunNo: <b>64112</b>								
Prep Date:	Analysis Date: <b>10/30/2019</b>	SeqNo: <b>2193899</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1910E46  
19-Nov-19

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB-48488	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 48488	RunNo: 64130								
Prep Date: 10/30/2019	Analysis Date: 10/31/2019	SeqNo: 2194444		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-48488	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 48488	RunNo: 64130								
Prep Date: 10/30/2019	Analysis Date: 10/31/2019	SeqNo: 2194445		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix
- B

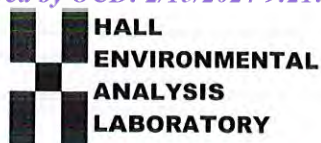
Analyte detected in the associated Method Blank
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety Env Solutions**Work Order Number: **1910E46**

RcptNo: 1

Received By: *Juan Rojas* 10/29/2019 9:15:00 AMCompleted By: **Erin Melendrez** 10/29/2019 10:14:50 AMReviewed By: *IO* 10/29/19

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: 8  
(8 or >12 unless noted)

Adjusted? NOChecked by: DAB 10/29/19

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			
2	1.0	Good	Yes			
3	0.2	Good	Yes			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

January 13, 2021

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 397-0510  
FAX: (575) 393-4388

RE: Lattion Pit

OrderNo.: 2012A76

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/22/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Case Narrative

WO#: 2012A76  
Date: 1/13/2021

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**CLIENT:** Safety & Environmental Solutions

**Project:** Lattion Pit

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Prep Comments for 300\_S\_PREP, Sample 2012A76-001A: Prep Method hold time was exceeded by 117.064 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-002A: Prep Method hold time was exceeded by 117.053 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-003A: Prep Method hold time was exceeded by 116.925 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-004A: Prep Method hold time was exceeded by 116.866 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-005A: Prep Method hold time was exceeded by 116.796 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-006A: Prep Method hold time was exceeded by 116.112 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-007A: Prep Method hold time was exceeded by 116.155 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-008A: Prep Method hold time was exceeded by 116.096 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-009A: Prep Method hold time was exceeded by 115.996 day(s)

Prep Comments for 300\_S\_PREP, Sample 2012A76-010A: Prep Method hold time was exceeded by 115.964 day(s)

Analytical Comments for 300\_S, Sample 2012A76-006A, Batch ID 57484 : Analytical Sequence's Prep Method hold time was exceeded by 116.112 day(s)

Analytical Comments for 300\_S, Sample 2012A76-005A, Batch ID 57484 : Analytical Sequence's Prep Method hold time was exceeded by 116.796 day(s)

Analytical Comments for 300\_S, Sample 2012A76-004A, Batch ID 57484 : Analytical Sequence's Prep Method hold time was exceeded by 116.866 day(s)

Analytical Comments for 300\_S, Sample 2012A76-003A, Batch ID 57484 : Analytical Sequence's Prep Method hold time was exceeded by 116.925 day(s)

Analytical Comments for 300\_S, Sample 2012A76-002A, Batch ID 57484 : Analytical Sequence's Prep Method hold time was exceeded by 117.053 day(s)

Analytical Comments for 300\_S, Sample 2012A76-001A, Batch ID 57484 : Analytical Sequence's Prep Method hold time was exceeded by 117.064 day(s)

Analytical Comments for 300\_S, Sample 2012A76-010A, Batch ID 57497 : Analytical Sequence's Prep Method hold time was exceeded by 115.964 day(s)

---





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Case Narrative

WO#: 2012A76  
Date: 1/13/2021

---

**CLIENT:** Safety & Environmental Solutions

**Project:** Lattion Pit

---

Analytical Comments for 300\_S, Sample 2012A76-009A, Batch ID 57497 : Analytical Sequence's Prep Method hold time was exceeded by 115.996 day(s)

Analytical Comments for 300\_S, Sample 2012A76-008A, Batch ID 57497 : Analytical Sequence's Prep Method hold time was exceeded by 116.096 day(s)

Analytical Comments for 300\_S, Sample 2012A76-007A, Batch ID 57497 : Analytical Sequence's Prep Method hold time was exceeded by 116.155 day(s)

Analytical Comments for 300\_S, Sample 2012A76-010A, Batch ID 57497 : Analytical Sequence's Prep Method hold time was exceeded by 115.964 day(s)

Analytical Comments for 300\_S, Sample 2012A76-009A, Batch ID 57497 : Analytical Sequence's Prep Method hold time was exceeded by 115.996 day(s)

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions Client Sample ID: ET1-N 4'  
Project: Lattion Pit Collection Date: 8/20/2020 9:20:00 AM  
Lab ID: 2012A76-001 Matrix: SOIL Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	2200	60	H	mg/Kg	20	1/12/2021 5:06:32 PM	57484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: ET1-N 8'

Project: Lattion Pit

Collection Date: 8/20/2020 9:35:00 AM

Lab ID: 2012A76-002

Matrix: SOIL

Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	2100	60	H	mg/Kg	20	1/12/2021 5:18:57 PM	57484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit



Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions      Client Sample ID: Lattion Back Yard 4'  
Project: Lattion Pit      Collection Date: 8/20/2020 12:40:00 PM  
Lab ID: 2012A76-003      Matrix: SOIL      Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	530	60	H	mg/Kg	20	1/12/2021 5:31:22 PM	57484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions      Client Sample ID: ET2-S, +150', 4'  
Project: Lattion Pit      Collection Date: 8/20/2020 2:05:00 PM  
Lab ID: 2012A76-004      Matrix: SOIL      Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	1700	60	H	mg/Kg	20	1/12/2021 5:43:48 PM	57484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions      Client Sample ID: NT1-W, +25', 4'  
Project: Lattion Pit      Collection Date: 8/20/2020 3:45:00 PM  
Lab ID: 2012A76-005      Matrix: SOIL      Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	1700	60	H	mg/Kg	20	1/12/2021 6:21:02 PM	57484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions  
Project: Lattion Pit  
Lab ID: 2012A76-006  
Matrix: SOIL  
Client Sample ID: NT2-E, +25', 4'  
Collection Date: 8/21/2020 8:10:00 AM  
Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	2200	60	H	mg/Kg	20	1/12/2021 6:33:27 PM	57484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**CLIENT:** Safety & Environmental Solutions  
**Project:** Lattion Pit  
**Lab ID:** 2012A76-007

**Matrix:** SOIL

**Client Sample ID:** WT1-N, +75', 4'  
**Collection Date:** 8/21/2020 9:20:00 AM  
**Received Date:** 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	660	60	H	mg/Kg	20	1/12/2021 7:35:01 PM	57497

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions      Client Sample ID: WT2-S, +150', 4'  
Project: Lattion Pit      Collection Date: 8/21/2020 10:45:00 AM  
Lab ID: 2012A76-008      Matrix: SOIL      Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	670	61	H	mg/Kg	20	1/12/2021 7:47:26 PM	57497

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions      Client Sample ID: ST1-E, +30', 4'

Project: Lattion Pit      Collection Date: 8/21/2020 1:10:00 PM

Lab ID: 2012A76-009      Matrix: SOIL      Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	14000	590	H	mg/Kg	200	1/13/2021 6:25:33 AM	57497

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2012A76

Date Reported: 1/13/2021

CLIENT: Safety & Environmental Solutions      Client Sample ID: ST2-W, +60', 4'  
Project: Lattion Pit      Collection Date: 8/21/2020 1:55:00 PM  
Lab ID: 2012A76-010      Matrix: SOIL      Received Date: 12/22/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	5300	300	H	mg/Kg	100	1/13/2021 6:37:58 AM	57497

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2012A76

13-Jan-21

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID: <b>MB-57497</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>57497</b>		RunNo: <b>74580</b>							
Prep Date: <b>1/12/2021</b>	Analysis Date: <b>1/12/2021</b>		SeqNo: <b>2632348</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-57497</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>57497</b>		RunNo: <b>74580</b>							
Prep Date: <b>1/12/2021</b>	Analysis Date: <b>1/12/2021</b>		SeqNo: <b>2632349</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.5	90	110			

Sample ID: <b>MB-57484</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>57484</b>		RunNo: <b>74555</b>							
Prep Date: <b>1/12/2021</b>	Analysis Date: <b>1/12/2021</b>		SeqNo: <b>2632728</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-57484</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>57484</b>		RunNo: <b>74555</b>							
Prep Date: <b>1/12/2021</b>	Analysis Date: <b>1/12/2021</b>		SeqNo: <b>2632729</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.6	90	110			

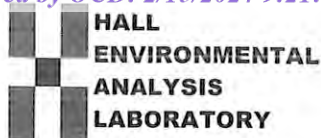
### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 13 of 13





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety & Environmental S**Work Order Number: **2012A76**RcptNo: **1**Received By: **Isaiah Ortiz**

12/22/2020 7:45:00 AM

I-OK

Completed By: **Isaiah Ortiz**

12/22/2020 9:17:23 AM

I-OK

Reviewed By:

JR 12/22/20

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted?

Checked by: SGL 12/22/20

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Not Present			
2	1.2	Good	Not Present			
3	1.6	Good	Not Present			





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

October 12, 2020

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL:  
FAX:

RE: Lattion Pit

OrderNo.: 2009B74

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/19/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 9/17/2020 10:05:00 AM

Lab ID: 2009B74-001

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.1	0.50		mg/L	5	10/1/2020 12:20:50 AM
Chloride	1400	100		mg/L	200	10/2/2020 1:08:54 AM
Bromide	2.3	0.50		mg/L	5	10/1/2020 12:20:50 AM
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	10/1/2020 12:20:50 AM
Sulfate	1500	100		mg/L	200	10/2/2020 1:08:54 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/1/2020 4:29:01 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ags
Aluminum	ND	0.10		mg/L	5	10/5/2020 6:31:50 PM
Barium	0.017	0.010		mg/L	5	10/5/2020 6:31:50 PM
Beryllium	ND	0.010		mg/L	5	10/5/2020 6:31:50 PM
Boron	0.39	0.20		mg/L	5	10/5/2020 6:31:50 PM
Cadmium	ND	0.010		mg/L	5	10/5/2020 6:31:50 PM
Calcium	970	50		mg/L	50	10/5/2020 6:33:42 PM
Chromium	ND	0.030		mg/L	5	10/5/2020 6:31:50 PM
Cobalt	ND	0.030		mg/L	5	10/5/2020 6:31:50 PM
Copper	ND	0.030		mg/L	5	10/5/2020 6:31:50 PM
Iron	ND	0.10		mg/L	5	10/5/2020 6:31:50 PM
Magnesium	370	5.0		mg/L	5	10/5/2020 6:31:50 PM
Manganese	0.25	0.010	*	mg/L	5	10/5/2020 6:31:50 PM
Molybdenum	ND	0.040		mg/L	5	10/5/2020 6:31:50 PM
Nickel	ND	0.050		mg/L	5	10/5/2020 6:31:50 PM
Potassium	5.1	5.0		mg/L	5	10/5/2020 6:31:50 PM
Silver	ND	0.025		mg/L	5	10/5/2020 6:31:50 PM
Sodium	320	5.0		mg/L	5	10/5/2020 6:31:50 PM
Zinc	ND	0.050		mg/L	5	10/5/2020 6:31:50 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.010		mg/L	10	9/30/2020 4:31:40 PM
Arsenic	ND	0.010		mg/L	10	9/30/2020 4:31:40 PM
Lead	ND	0.0050		mg/L	10	9/30/2020 4:31:40 PM
Selenium	ND	0.010		mg/L	10	9/30/2020 4:31:40 PM
Thallium	ND	0.0050		mg/L	10	9/30/2020 5:49:49 PM
Uranium	ND	0.0050		mg/L	10	9/30/2020 4:31:40 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/26/2020 3:59:18 AM
Toluene	ND	1.0		µg/L	1	9/26/2020 3:59:18 AM
Ethylbenzene	ND	1.0		µg/L	1	9/26/2020 3:59:18 AM
Naphthalene	ND	2.0		µg/L	1	9/26/2020 3:59:18 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 3:59:18 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 9/17/2020 10:05:00 AM

Lab ID: 2009B74-001

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
2-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 3:59:18 AM
Xylenes, Total	ND	1.5		µg/L	1	9/26/2020 3:59:18 AM
Surr: 1,2-Dichloroethane-d4	92.0	70-130		%Rec	1	9/26/2020 3:59:18 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	9/26/2020 3:59:18 AM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	9/26/2020 3:59:18 AM
Surr: Toluene-d8	95.3	70-130		%Rec	1	9/26/2020 3:59:18 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JRR
Conductivity	7000	10		µmhos/c	1	9/25/2020 8:48:26 AM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: JRR
pH	7.41		H	pH units	1	9/24/2020 1:19:00 PM
<b>SM2320B: ALKALINITY</b>						Analyst: JRR
Bicarbonate (As CaCO3)	169.8	20.00		mg/L Ca	1	9/24/2020 1:19:00 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/24/2020 1:19:00 PM
Total Alkalinity (as CaCO3)	169.8	20.00		mg/L Ca	1	9/24/2020 1:19:00 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	5650	20.0	*	mg/L	1	9/23/2020 5:56:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 9/17/2020 11:15:00 AM

Lab ID: 2009B74-002

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.2	0.50		mg/L	5	10/1/2020 12:45:40 AM
Chloride	960	50		mg/L	100	10/2/2020 1:21:14 AM
Bromide	1.7	0.50		mg/L	5	10/1/2020 12:45:40 AM
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	10/1/2020 12:45:40 AM
Sulfate	1500	50		mg/L	100	10/2/2020 1:21:14 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/1/2020 4:41:26 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ags
Aluminum	ND	0.10		mg/L	5	10/5/2020 6:35:33 PM
Barium	0.012	0.010		mg/L	5	10/5/2020 6:35:33 PM
Beryllium	ND	0.010		mg/L	5	10/5/2020 6:35:33 PM
Boron	ND	0.20		mg/L	5	10/5/2020 6:35:33 PM
Cadmium	ND	0.010		mg/L	5	10/7/2020 7:58:32 PM
Calcium	760	50		mg/L	50	10/5/2020 6:37:23 PM
Chromium	ND	0.030		mg/L	5	10/5/2020 6:35:33 PM
Cobalt	ND	0.030		mg/L	5	10/5/2020 6:35:33 PM
Copper	ND	0.030		mg/L	5	10/5/2020 6:35:33 PM
Iron	ND	0.10		mg/L	5	10/5/2020 6:35:33 PM
Magnesium	300	5.0		mg/L	5	10/5/2020 6:35:33 PM
Manganese	0.053	0.010	*	mg/L	5	10/5/2020 6:35:33 PM
Molybdenum	ND	0.040		mg/L	5	10/5/2020 6:35:33 PM
Nickel	ND	0.050		mg/L	5	10/5/2020 6:35:33 PM
Potassium	ND	5.0		mg/L	5	10/5/2020 6:35:33 PM
Silver	ND	0.025		mg/L	5	10/5/2020 6:35:33 PM
Sodium	150	5.0		mg/L	5	10/5/2020 6:35:33 PM
Zinc	ND	0.050		mg/L	5	10/5/2020 6:35:33 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.010		mg/L	10	9/30/2020 4:34:16 PM
Arsenic	ND	0.010		mg/L	10	9/30/2020 4:34:16 PM
Lead	ND	0.0050		mg/L	10	9/30/2020 4:34:16 PM
Selenium	ND	0.010		mg/L	10	9/30/2020 4:34:16 PM
Thallium	ND	0.0050		mg/L	10	9/30/2020 5:52:25 PM
Uranium	ND	0.0050		mg/L	10	9/30/2020 4:34:16 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/26/2020 5:25:06 AM
Toluene	ND	1.0		µg/L	1	9/26/2020 5:25:06 AM
Ethylbenzene	ND	1.0		µg/L	1	9/26/2020 5:25:06 AM
Naphthalene	ND	2.0		µg/L	1	9/26/2020 5:25:06 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 5:25:06 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**Lab Order **2009B74**Date Reported: **10/12/2020****CLIENT:** Safety & Environmental Solutions**Client Sample ID:** MW-4**Project:** Lattion Pit**Collection Date:** 9/17/2020 11:15:00 AM**Lab ID:** 2009B74-002**Matrix:** AQUEOUS**Received Date:** 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
2-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 5:25:06 AM
Xylenes, Total	ND	1.5		µg/L	1	9/26/2020 5:25:06 AM
Surr: 1,2-Dichloroethane-d4	87.1	70-130		%Rec	1	9/26/2020 5:25:06 AM
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	9/26/2020 5:25:06 AM
Surr: Dibromofluoromethane	106	70-130		%Rec	1	9/26/2020 5:25:06 AM
Surr: Toluene-d8	95.5	70-130		%Rec	1	9/26/2020 5:25:06 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>JRR</b>
Conductivity	5300	10		µmhos/c	1	9/25/2020 8:51:14 AM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>JRR</b>
pH	7.68		H	pH units	1	9/24/2020 1:29:43 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>JRR</b>
Bicarbonate (As CaCO3)	141.6	20.00		mg/L Ca	1	9/24/2020 1:29:43 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/24/2020 1:29:43 PM
Total Alkalinity (as CaCO3)	141.6	20.00		mg/L Ca	1	9/24/2020 1:29:43 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>KS</b>
Total Dissolved Solids	4310	20.0	*	mg/L	1	9/23/2020 5:56:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 9/17/2020 12:10:00 PM

Lab ID: 2009B74-003

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	1.3	0.50		mg/L	5	10/1/2020 1:35:18 AM
Chloride	45	2.5		mg/L	5	10/1/2020 1:35:18 AM
Bromide	ND	0.50		mg/L	5	10/1/2020 1:35:18 AM
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	10/1/2020 1:35:18 AM
Sulfate	920	10		mg/L	20	10/1/2020 1:47:42 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/1/2020 4:53:51 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ags
Aluminum	ND	0.10		mg/L	5	10/5/2020 6:39:14 PM
Barium	0.018	0.010		mg/L	5	10/5/2020 6:39:14 PM
Beryllium	ND	0.010		mg/L	5	10/5/2020 6:39:14 PM
Boron	ND	0.20		mg/L	5	10/5/2020 6:39:14 PM
Cadmium	ND	0.010		mg/L	5	10/5/2020 6:39:14 PM
Calcium	290	5.0		mg/L	5	10/5/2020 6:39:14 PM
Chromium	ND	0.030		mg/L	5	10/7/2020 8:02:14 PM
Cobalt	ND	0.030		mg/L	5	10/5/2020 6:39:14 PM
Copper	ND	0.030		mg/L	5	10/5/2020 6:39:14 PM
Iron	ND	0.10		mg/L	5	10/5/2020 6:39:14 PM
Magnesium	110	5.0		mg/L	5	10/5/2020 6:39:14 PM
Manganese	0.011	0.010		mg/L	5	10/5/2020 6:39:14 PM
Molybdenum	ND	0.040		mg/L	5	10/5/2020 6:39:14 PM
Nickel	ND	0.050		mg/L	5	10/5/2020 6:39:14 PM
Potassium	ND	5.0		mg/L	5	10/5/2020 6:39:14 PM
Silver	ND	0.025		mg/L	5	10/5/2020 6:39:14 PM
Sodium	36	5.0		mg/L	5	10/5/2020 6:39:14 PM
Zinc	ND	0.050		mg/L	5	10/5/2020 6:39:14 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.010		mg/L	10	9/30/2020 4:36:52 PM
Arsenic	ND	0.010		mg/L	10	9/30/2020 4:36:52 PM
Lead	ND	0.0050		mg/L	10	9/30/2020 4:36:52 PM
Selenium	ND	0.010		mg/L	10	9/30/2020 4:36:52 PM
Thallium	ND	0.0050		mg/L	10	9/30/2020 6:00:15 PM
Uranium	ND	0.0050		mg/L	10	9/30/2020 4:36:52 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/26/2020 5:53:49 AM
Toluene	ND	1.0		µg/L	1	9/26/2020 5:53:49 AM
Ethylbenzene	ND	1.0		µg/L	1	9/26/2020 5:53:49 AM
Naphthalene	ND	2.0		µg/L	1	9/26/2020 5:53:49 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 5:53:49 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 9/17/2020 12:10:00 PM

Lab ID: 2009B74-003

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
2-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 5:53:49 AM
Xylenes, Total	ND	1.5		µg/L	1	9/26/2020 5:53:49 AM
Surr: 1,2-Dichloroethane-d4	86.2	70-130		%Rec	1	9/26/2020 5:53:49 AM
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	9/26/2020 5:53:49 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	9/26/2020 5:53:49 AM
Surr: Toluene-d8	95.9	70-130		%Rec	1	9/26/2020 5:53:49 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JRR
Conductivity	1900	10		µmhos/c	1	9/25/2020 8:54:02 AM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: JRR
pH	7.69		H	pH units	1	9/24/2020 1:39:36 PM
<b>SM2320B: ALKALINITY</b>						Analyst: JRR
Bicarbonate (As CaCO3)	177.7	20.00		mg/L Ca	1	9/24/2020 1:39:36 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/24/2020 1:39:36 PM
Total Alkalinity (as CaCO3)	177.7	20.00		mg/L Ca	1	9/24/2020 1:39:36 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	1600	20.0	*	mg/L	1	9/23/2020 5:56:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 9/17/2020 1:00:00 PM

Lab ID: 2009B74-004

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JRR
Fluoride	ND	0.10		mg/L	1	10/1/2020 2:00:07 AM
Chloride	760	25		mg/L	50	10/2/2020 1:33:34 AM
Bromide	1.2	0.10		mg/L	1	10/1/2020 2:00:07 AM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/1/2020 2:00:07 AM
Sulfate	1000	25		mg/L	50	10/2/2020 1:33:34 AM
Nitrate+Nitrite as N	2.4	1.0		mg/L	5	10/1/2020 5:06:15 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ags
Aluminum	ND	0.10		mg/L	5	10/5/2020 6:50:05 PM
Barium	0.015	0.010		mg/L	5	10/7/2020 8:13:13 PM
Beryllium	ND	0.010		mg/L	5	10/5/2020 6:50:05 PM
Boron	ND	0.20		mg/L	5	10/5/2020 6:50:05 PM
Cadmium	ND	0.010		mg/L	5	10/7/2020 8:13:13 PM
Calcium	610	50		mg/L	50	10/5/2020 6:51:57 PM
Chromium	ND	0.030		mg/L	5	10/7/2020 8:13:13 PM
Cobalt	ND	0.030		mg/L	5	10/7/2020 8:13:13 PM
Copper	ND	0.030		mg/L	5	10/5/2020 6:50:05 PM
Iron	ND	0.10		mg/L	5	10/7/2020 8:13:13 PM
Magnesium	200	5.0		mg/L	5	10/5/2020 6:50:05 PM
Manganese	ND	0.010		mg/L	5	10/7/2020 8:13:13 PM
Molybdenum	ND	0.040		mg/L	5	10/7/2020 8:13:13 PM
Nickel	ND	0.050		mg/L	5	10/7/2020 8:13:13 PM
Potassium	5.4	5.0		mg/L	5	10/5/2020 6:50:05 PM
Silver	ND	0.025		mg/L	5	10/7/2020 8:13:13 PM
Sodium	100	5.0		mg/L	5	10/5/2020 6:50:05 PM
Zinc	ND	0.050		mg/L	5	10/7/2020 8:13:13 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.010		mg/L	10	9/30/2020 4:39:28 PM
Arsenic	ND	0.010		mg/L	10	9/30/2020 4:39:28 PM
Lead	ND	0.0050		mg/L	10	9/30/2020 4:39:28 PM
Selenium	0.013	0.010		mg/L	10	9/30/2020 4:39:28 PM
Thallium	ND	0.0050		mg/L	10	9/30/2020 6:02:51 PM
Uranium	0.0052	0.0050		mg/L	10	9/30/2020 4:39:28 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/26/2020 6:22:15 AM
Toluene	ND	1.0		µg/L	1	9/26/2020 6:22:15 AM
Ethylbenzene	ND	1.0		µg/L	1	9/26/2020 6:22:15 AM
Naphthalene	ND	2.0		µg/L	1	9/26/2020 6:22:15 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 6:22:15 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 9/17/2020 1:00:00 PM

Lab ID: 2009B74-004

Matrix: AQUEOUS

Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: DJF
2-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 6:22:15 AM
Xylenes, Total	ND	1.5		µg/L	1	9/26/2020 6:22:15 AM
Surr: 1,2-Dichloroethane-d4	94.2	70-130		%Rec	1	9/26/2020 6:22:15 AM
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	9/26/2020 6:22:15 AM
Surr: Dibromofluoromethane	109	70-130		%Rec	1	9/26/2020 6:22:15 AM
Surr: Toluene-d8	94.0	70-130		%Rec	1	9/26/2020 6:22:15 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: JRR
Conductivity	4000	10		µmhos/c	1	9/25/2020 8:56:50 AM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: JRR
pH	7.67		H	pH units	1	9/24/2020 1:50:14 PM
<b>SM2320B: ALKALINITY</b>						Analyst: JRR
Bicarbonate (As CaCO3)	149.2	20.00		mg/L Ca	1	9/24/2020 1:50:14 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/24/2020 1:50:14 PM
Total Alkalinity (as CaCO3)	149.2	20.00		mg/L Ca	1	9/24/2020 1:50:14 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: KS
Total Dissolved Solids	3160	20.0	*	mg/L	1	9/23/2020 5:56:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2009B74

Date Reported: 10/12/2020

CLIENT: Safety & Environmental Solutions Client Sample ID: Trip Blank  
Project: Lattion Pit Collection Date:  
Lab ID: 2009B74-005 Matrix: AQUEOUS Received Date: 9/19/2020 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/26/2020 6:50:42 AM
Toluene	ND	1.0		µg/L	1	9/26/2020 6:50:42 AM
Ethylbenzene	ND	1.0		µg/L	1	9/26/2020 6:50:42 AM
Naphthalene	ND	2.0		µg/L	1	9/26/2020 6:50:42 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 6:50:42 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	9/26/2020 6:50:42 AM
Xylenes, Total	ND	1.5		µg/L	1	9/26/2020 6:50:42 AM
Surr: 1,2-Dichloroethane-d4	92.0	70-130		%Rec	1	9/26/2020 6:50:42 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	9/26/2020 6:50:42 AM
Surr: Dibromofluoromethane	109	70-130		%Rec	1	9/26/2020 6:50:42 AM
Surr: Toluene-d8	92.2	70-130		%Rec	1	9/26/2020 6:50:42 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2			
	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
<b>CATIONS</b>										
Sodium	320	13.92	150	6.52	36	1.57	100	4.35		
Potassium	5.1	0.13					5.4	0.14		
Calcium	970	48.40	760	37.92	290	14.47	610	30.44		
Magnesium	370	30.45	300	24.69	110	9.05	200	16.46		
<b>Total Cations</b>		92.91		69.14		25.09		51.39		
<b>ANIONS</b>										
Sulfate	1500	31.23	1500	31.23	920	19.15	1000	20.82		
Chloride	1400	39.49	960	27.08	45	1.27	760	21.44		
Bicarbonate (CaCO <sub>3</sub> )	169.8	3.39	142	2.83	177.7	3.55	149.2	2.98		
Carbonate (CaCO <sub>3</sub> )										
Phosphate (P)										
Nitrite (N)										
Nitrate (N)	1.1	0.06	1.2	0.06	1.3	0.07				
Fluoride	2	0.03	1.7	0.02						
Bromide							1.2	0.02		
<b>Total Anions</b>		74.20		61.23		24.04		45.26		
Elect. Cond. (µMhos/cm)	7000		5300		1900		4000			
<b>CATION/ANION RATIO</b>		1.25		1.13		1.04		1.14		
% Difference		11		6		2		6		
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>										
TDS (measured)	5650		4310		1600		3160			
TDS (calculated)	4670		3758		1509		2766			
Ratio meas TDS:calc TDS		1.2		1.1		1.1		1.1		
Ratio Meas. TDS:EC		0.81		0.81		0.84		0.79		
Ratio Calc. TDS:EC		0.67		0.71		0.79		0.69		
Ratio of anion sum:EC		1.1		1.2		1.3		1.1		
Ratio of cation sum:EC		1.3		1.3		1.3		1.3		

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74

20-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB-A		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: PBW		Batch ID: A72400		RunNo: 72400						
Prep Date:		Analysis Date: 10/5/2020		SeqNo: 2539624		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: A72400		RunNo: 72400						
Prep Date:		Analysis Date: 10/5/2020		SeqNo: 2539626		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.48	0.020	0.5000	0	96.7	85	115			
Barium	0.47	0.0020	0.5000	0	94.8	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.1	85	115			
Boron	0.49	0.040	0.5000	0	97.1	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.9	85	115			
Calcium	50	1.0	50.00	0	99.6	85	115			
Chromium	0.46	0.0060	0.5000	0	92.6	85	115			
Cobalt	0.45	0.0060	0.5000	0	90.9	85	115			
Copper	0.45	0.0060	0.5000	0	90.9	85	115			
Iron	0.47	0.020	0.5000	0	94.3	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.46	0.0020	0.5000	0	92.8	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.7	85	115			
Nickel	0.45	0.010	0.5000	0	89.6	85	115			
Potassium	49	1.0	50.00	0	98.6	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74  
20-Aug-21

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: LCS-A	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: A72400	RunNo: 72400								
Prep Date:	Analysis Date: 10/5/2020	SeqNo: 2539626 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.090	0.0050	0.1000	0	89.6	85	115			
Sodium	50	1.0	50.00	0	99.9	85	115			
Zinc	0.47	0.010	0.5000	0	94.2	85	115			

Sample ID: MB-B	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: B72487	RunNo: 72487								
Prep Date:	Analysis Date: 10/7/2020	SeqNo: 2543978 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: LCS-B	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: B72487	RunNo: 72487								
Prep Date:	Analysis Date: 10/7/2020	SeqNo: 2543980 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.5	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.46	0.0060	0.5000	0	92.5	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Iron	0.48	0.020	0.5000	0	96.9	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.46	0.010	0.5000	0	91.4	85	115			
Silver	0.094	0.0050	0.1000	0	94.2	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix	



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74  
20-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW		Batch ID: B72310		RunNo: 72310						
Prep Date:		Analysis Date: 9/30/2020		SeqNo: 2536028		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								
Uranium	ND	0.00050								

Sample ID: LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW		Batch ID: B72310		RunNo: 72310						
Prep Date:		Analysis Date: 9/30/2020		SeqNo: 2536030		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.022	0.0010	0.02500	0	89.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.011	0.00050	0.01250	0	90.9	85	115			
Selenium	0.022	0.0010	0.02500	0	88.3	85	115			
Thallium	0.011	0.00050	0.01250	0	91.0	85	115			
Uranium	0.011	0.00050	0.01250	0	86.1	85	115			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2009B74

20-Aug-21

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R72315</b>	RunNo: <b>72315</b>								
Prep Date:	Analysis Date: <b>9/30/2020</b>	SeqNo: <b>2536282</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R72315</b>	RunNo: <b>72315</b>								
Prep Date:	Analysis Date: <b>9/30/2020</b>	SeqNo: <b>2536283</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.6	90	110			
Chloride	4.5	0.50	5.000	0	90.4	90	110			
Bromide	2.3	0.10	2.500	0	93.6	90	110			
Phosphorus, Orthophosphate (As P)	4.6	0.50	5.000	0	91.3	90	110			
Sulfate	9.2	0.50	10.00	0	91.7	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	93.7	90	110			

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>A72346</b>	RunNo: <b>72346</b>								
Prep Date:	Analysis Date: <b>10/1/2020</b>	SeqNo: <b>2537511</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>A72346</b>	RunNo: <b>72346</b>								
Prep Date:	Analysis Date: <b>10/1/2020</b>	SeqNo: <b>2537512</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.5	0.50	5.000	0	90.5	90	110			
Sulfate	9.0	0.50	10.00	0	90.3	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74

20-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: SL72167	RunNo: 72167								
Prep Date:	Analysis Date: 9/25/2020	SeqNo: 2529644 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: SL72167	RunNo: 72167								
Prep Date:	Analysis Date: 9/25/2020	SeqNo: 2529645 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.1	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74

20-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: Ics-1 99.2uS eC	SampType: Ics	TestCode: SM2510B: Specific Conductance								
Client ID: LCSW	Batch ID: R72166	RunNo: 72166								
Prep Date:	Analysis Date: 9/25/2020	SeqNo: 2529530	Units: µmhos/cm							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	98	10	99.20	0	98.8	85	115			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74

20-Aug-21

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID: <b>mb-1 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R72131</b>	RunNo: <b>72131</b>								
Prep Date:	Analysis Date: <b>9/24/2020</b>	SeqNo: <b>2527980</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-1 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R72131</b>	RunNo: <b>72131</b>								
Prep Date:	Analysis Date: <b>9/24/2020</b>	SeqNo: <b>2527981</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.44	20.00	80.00	0	95.6	90	110			

Sample ID: <b>mb-2 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R72131</b>	RunNo: <b>72131</b>								
Prep Date:	Analysis Date: <b>9/24/2020</b>	SeqNo: <b>2528003</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-2 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R72131</b>	RunNo: <b>72131</b>								
Prep Date:	Analysis Date: <b>9/24/2020</b>	SeqNo: <b>2528004</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.80	20.00	80.00	0	97.3	90	110			

Sample ID: <b>mb-3 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R72131</b>	RunNo: <b>72131</b>								
Prep Date:	Analysis Date: <b>9/24/2020</b>	SeqNo: <b>2528026</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-3 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R72131</b>	RunNo: <b>72131</b>								
Prep Date:	Analysis Date: <b>9/24/2020</b>	SeqNo: <b>2528027</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.52	20.00	80.00	0	96.9	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 16 of 17

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2009B74  
20-Aug-21

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB-55350	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 55350	RunNo: 72087								
Prep Date: 9/22/2020	Analysis Date: 9/23/2020	SeqNo: 2525437 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-55350	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 55350	RunNo: 72087								
Prep Date: 9/22/2020	Analysis Date: 9/23/2020	SeqNo: 2525438 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix
- B

Analyte detected in the associated Method Blank
- E

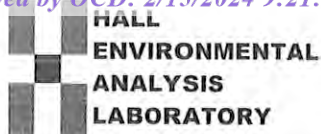
Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety & Environmental Solutions**

Work Order Number: **2009B74**

RcptNo: **1**

Received By: **Emily Mocho**

**9/19/2020 7:30:00 AM**

Completed By: **Emily Mocho**

**9/19/2020 9:41:42 AM**

Reviewed By:

*JR 9/19/20*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

*(8)*

( $\leq 2$  or  $>12$  unless noted)

Adjusted? *no*

Checked by:

*CM 9/19/20*

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.0	Good	Not Present			

## Chain-of-Custody Record

Client: Safety & Environmental Solutions

Mailing Address: 703 E. Clarendon

Phone #: 575-397-0510

email or Fax#:

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: ☐ Standard ☒ Rush

Project Name: E05 (YATED)

Project #: 4AT-04-002

Project Manager: Boyer, Drew

Sampler: Sosa, Sonya

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 0.1-0.1=0.0 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
09/17	1005	160	MW-1	6		2009874
09/17	1115	160	MW-4	6		001
09/17	1210	160	MW-3	6		002
09/17	1300	160	MW-2	6		003
			Trip Blank			004
			gm 9/19/20			005

Relinquished by: son jerry

Relinquished by: [Signature]

Date: 09/18 0800

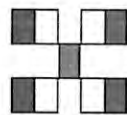
Date: 9/18/20 1900

Received by: [Signature]

Via: gm courier

Date: 9/18/20 0800

Date: 9/18/20 7:30



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

TPH:8015D(GRO / DRO / MRO)	BTX / MTBE / TMBs (8021)
8081 Pesticides/8082 PCBs	
EDB (Method 504.1)	
PAHs by 8310 or 8270SIMS	
RCRA 8 Metals	
Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	
BTX, Naphthalene	
WPC, Ds. Metals	
CATIONS, ANIONS	
TDS, BALANCE	
LAB. PIV	
SP. COND.	

Remarks:



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

July 08, 2021

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 397-0510  
FAX (575) 393-4388

RE: Lattion Pit Delineation

OrderNo.: 2107003

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/1/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 2107003

Date Reported: 7/8/2021

CLIENT: Safety & Environmental Solutions  
Project: Lattion Pit Delineation

Lab Order: 2107003

Lab ID:	2107003-001	Collection Date:	5/28/2021 10:12:00 AM
Client Sample ID:	T1S, + 300' E, 4'	Matrix:	SOIL
Analyses	Result	RL	Qual Units DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			Analyst: VP
Chloride	1000	60	H mg/Kg 20 7/6/2021 7:20:50 PM 61134

Lab ID:	2107003-002	Collection Date:	5/28/2021 11:25:00 AM
Client Sample ID:	T7W, 300', 4'	Matrix:	SOIL
Analyses	Result	RL	Qual Units DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			Analyst: VP
Chloride	450	61	H mg/Kg 20 7/6/2021 7:33:14 PM 61134

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2107003

08-Jul-21

Client: Safety & Environmental Solutions

Project: Lattion Pit Delineation

Sample ID: MB-61134		SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID: PBS		Batch ID: 61134		RunNo: 79587						
Prep Date: 7/6/2021		Analysis Date: 7/6/2021		SeqNo: 2799423		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-61134		SampType: LCS		TestCode: EPA Method 300.0: Anions						
Client ID: LCSS		Batch ID: 61134		RunNo: 79587						
Prep Date: 7/6/2021		Analysis Date: 7/6/2021		SeqNo: 2799424		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.0	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

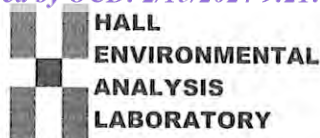
E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 2 of 2



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety & Environmental Solutions**

Work Order Number: **2107003**

RcptNo: 1

Received By: **Juan Rojas**

7/1/2021 7:30:00 AM

*Juan Rojas*

Completed By: **Cheyenne Cason**

7/1/2021 8:03:36 AM

*Cheyenne Cason*

Reviewed By:

*JR 7/1/21*

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted?

Checked by: *KPG 7/1/21*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good				







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

June 16, 2021

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL:  
FAX

RE: Lattion Pit Site

OrderNo.: 2106331

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/7/2021 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 14, 2021.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order: 2106331

Date Reported: 6/16/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Lab Order: 2106331

Project: Lattion Pit Site

Lab ID: 2106331-001

Collection Date: 5/28/2021 9:05:00 AM

Client Sample ID: T1S, 8'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	5500	300		mg/Kg	100	6/11/2021 12:24:58 AM	60543

Lab ID: 2106331-002

Collection Date: 5/28/2021 10:00:00 AM

Client Sample ID: T1S+250'E, 4'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	870	60		mg/Kg	20	6/10/2021 9:43:40 AM	60543

Lab ID: 2106331-003

Collection Date: 5/28/2021 10:55:00 AM

Client Sample ID: T4W+150'W, 8'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	1600	60		mg/Kg	20	6/10/2021 9:56:05 AM	60543

Lab ID: 2106331-004

Collection Date: 5/28/2021 12:50:00 PM

Client Sample ID: T3W+100'N, 8'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	1200	60		mg/Kg	20	6/10/2021 10:08:29 AM	60543

Lab ID: 2106331-005

Collection Date: 5/28/2021 1:42:00 PM

Client Sample ID: T2N+75', 8'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	810	60		mg/Kg	20	6/10/2021 10:20:54 AM	60543

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**  
Lab Order: **2106331**  
Date Reported: **6/16/2021**

<b>CLIENT:</b> Safety & Environmental Solutions		<b>Lab Order:</b> 2106331	
<b>Project:</b> Lattion Pit Site			
<b>Lab ID:</b>	2106331-006	<b>Collection Date:</b>	5/28/2021 2:45:00 PM
<b>Client Sample ID:</b>	T1E+75'E, 4'	<b>Matrix:</b>	SOIL
<b>Analyses</b>	<b>Result</b>	<b>RL Qual Units DF</b>	<b>Date Analyzed Batch ID</b>
<b>EPA METHOD 300.0: ANIONS</b>			Analyst: <b>VP</b>
Chloride	9900	600 mg/Kg 200	6/11/2021 12:37:23 AM 60543

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2106331

16-Jun-21

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit Site

Sample ID: <b>MB-60543</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>									
Client ID: <b>PBS</b>	Batch ID: <b>60543</b>	RunNo: <b>79004</b>									
Prep Date: <b>6/10/2021</b>	Analysis Date: <b>6/10/2021</b>	SeqNo: <b>2771439</b> Units: <b>mg/Kg</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID: <b>LCS-60543</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>									
Client ID: <b>LCSS</b>	Batch ID: <b>60543</b>	RunNo: <b>79004</b>									
Prep Date: <b>6/10/2021</b>	Analysis Date: <b>6/10/2021</b>	SeqNo: <b>2771440</b> Units: <b>mg/Kg</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	96.5	90	110				

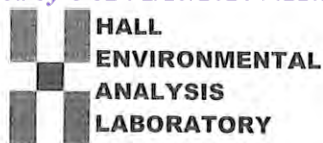
Sample ID: <b>LCSB-60543</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>									
Client ID: <b>LCSS</b>	Batch ID: <b>60543</b>	RunNo: <b>79004</b>									
Prep Date: <b>6/10/2021</b>	Analysis Date: <b>6/10/2021</b>	SeqNo: <b>2771477</b> Units: <b>mg/Kg</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	15	1.5	15.00	0	96.9	90	110				

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 3 of 3



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety & Environmental Solutions**

Work Order Number: **2106331**

RcptNo: 1

Received By: **Andy Freeman**

6/7/2021 11:15:00 AM

Completed By: **Sean Livingston**

6/7/2021 11:46:11 AM

Reviewed By:

JR 6/7/21

*Andy Freeman*  
*Sean Livingston*

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☐ No ☒ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐ Not required
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted?

Checked by: *WPL 6/07/21*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.6	Good				



## Chain-of-Custody Record

Turn-Around Time:

Client: Safety & ENV Solutions☒ Standard ☐ Rush

Project Name:

Mailing Address: PO Box 1613LATION PIT SITEPhone #: (505) 320-7067Project #: YAT-04-002email or Fax#: dhoboyan@esolutions.comProject Manager: DAVE BOYERQA/QC Package: Standard☒ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)Sampler: D BoyerOn Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 9.8-0.2=9.6 (°C)

Date Time Matrix Sample Name

Container Type and # Preservative Type HEAL No.

BTEX / MTBE / TMB's (8021)

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cl, F, Br, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Chlorides

5/28/05 5:01 5011 T11+350E, 4' 18455 C021 001

1202 5011 T11+350E, 4' 002

1255 1 T4W 150'W, 8' 003

1352 1 T3W+100'N, 8' 004

1342 1 T1N 75' 8' 005

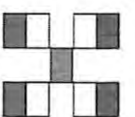
5/28/05 1445 5211 T1E 75E 4' 18455 C021 006

Retrieved by: AD BoyerReceived by: Chase

Date Time

Remarks: Invoice to: chaste\_solutions.comRetrieved by: AD BoyerReceived by: Chase

Date Time

Remarks: cc report as well

**HALL ENVIRONMENTAL**  
**ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

August 26, 2021

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL:  
FAX

RE: Lattion Pit

OrderNo.: 2108975

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/18/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 8/17/2021 9:15:00 AM

Lab ID: 2108975-001

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Fluoride	2.0	0.50		mg/L	5	8/18/2021 7:55:33 PM
Chloride	1800	100	*	mg/L	200	8/20/2021 4:14:59 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/18/2021 8:08:26 PM
Bromide	2.5	0.50		mg/L	5	8/18/2021 7:55:33 PM
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/18/2021 7:55:33 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/18/2021 7:55:33 PM
Sulfate	1800	100	*	mg/L	200	8/20/2021 4:14:59 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Aluminum	ND	0.10		mg/L	5	8/19/2021 10:10:54 AM
Barium	0.040	0.010		mg/L	5	8/19/2021 10:10:54 AM
Beryllium	ND	0.010		mg/L	5	8/19/2021 10:10:54 AM
Boron	0.36	0.20		mg/L	5	8/19/2021 10:10:54 AM
Cadmium	ND	0.010		mg/L	5	8/19/2021 10:10:54 AM
Calcium	940	20		mg/L	20	8/19/2021 10:40:40 AM
Chromium	ND	0.030		mg/L	5	8/19/2021 10:10:54 AM
Cobalt	ND	0.030		mg/L	5	8/19/2021 10:10:54 AM
Copper	ND	0.030		mg/L	5	8/19/2021 10:10:54 AM
Iron	0.30	0.020		mg/L	1	8/19/2021 10:09:11 AM
Magnesium	370	5.0		mg/L	5	8/19/2021 10:10:54 AM
Manganese	1.7	0.010	*	mg/L	5	8/19/2021 10:10:54 AM
Molybdenum	ND	0.040		mg/L	5	8/19/2021 10:10:54 AM
Nickel	ND	0.050		mg/L	5	8/19/2021 10:10:54 AM
Potassium	5.3	1.0		mg/L	1	8/19/2021 10:09:11 AM
Silver	ND	0.025		mg/L	5	8/19/2021 10:10:54 AM
Sodium	270	5.0		mg/L	5	8/19/2021 10:10:54 AM
Zinc	ND	0.050		mg/L	5	8/19/2021 10:10:54 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.0010		mg/L	1	8/19/2021 2:59:59 PM
Arsenic	0.0023	0.0010		mg/L	1	8/19/2021 2:59:59 PM
Lead	ND	0.0025		mg/L	5	8/19/2021 5:08:04 PM
Selenium	ND	0.0010		mg/L	1	8/19/2021 2:59:59 PM
Thallium	ND	0.0012		mg/L	5	8/19/2021 5:08:04 PM
Uranium	ND	0.0025		mg/L	5	8/19/2021 5:08:04 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: CCM
Benzene	ND	1.0		µg/L	1	8/19/2021 1:22:00 AM
Toluene	ND	1.0		µg/L	1	8/19/2021 1:22:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2021 1:22:00 AM
Naphthalene	ND	2.0		µg/L	1	8/19/2021 1:22:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 16



## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 8/17/2021 9:15:00 AM

Lab ID: 2108975-001

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 1:22:00 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 1:22:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2021 1:22:00 AM
Surr: 1,2-Dichloroethane-d4	79.9	70-130		%Rec	1	8/19/2021 1:22:00 AM
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	8/19/2021 1:22:00 AM
Surr: Dibromofluoromethane	83.9	70-130		%Rec	1	8/19/2021 1:22:00 AM
Surr: Toluene-d8	91.9	70-130		%Rec	1	8/19/2021 1:22:00 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>CAS</b>
Conductivity	7500	10		µmhos/c	1	8/23/2021 1:34:40 PM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>CAS</b>
pH	7.05		H	pH units	1	8/19/2021 6:51:18 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>CAS</b>
Bicarbonate (As CaCO3)	186.4	20.00		mg/L Ca	1	8/19/2021 6:51:18 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/19/2021 6:51:18 PM
Total Alkalinity (as CaCO3)	186.4	20.00		mg/L Ca	1	8/19/2021 6:51:18 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>JMT</b>
Total Dissolved Solids	5970	40.0	*D	mg/L	1	8/26/2021 7:26:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 8/17/2021 10:05:00 AM

Lab ID: 2108975-002

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Fluoride	2.5	0.50		mg/L	5	8/18/2021 8:47:05 PM
Chloride	1100	50	*	mg/L	100	8/20/2021 4:27:20 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/18/2021 8:47:05 PM
Bromide	1.6	0.50		mg/L	5	8/18/2021 8:47:05 PM
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/18/2021 8:47:05 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/18/2021 8:47:05 PM
Sulfate	1800	50	*	mg/L	100	8/20/2021 4:27:20 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Aluminum	ND	0.020		mg/L	1	8/19/2021 10:12:30 AM
Barium	0.012	0.0020		mg/L	1	8/19/2021 10:12:30 AM
Beryllium	ND	0.0020		mg/L	1	8/19/2021 10:12:30 AM
Boron	0.19	0.040		mg/L	1	8/19/2021 10:12:30 AM
Cadmium	ND	0.0020		mg/L	1	8/19/2021 10:12:30 AM
Calcium	710	10		mg/L	10	8/19/2021 10:42:17 AM
Chromium	ND	0.0060		mg/L	1	8/19/2021 10:12:30 AM
Cobalt	ND	0.0060		mg/L	1	8/19/2021 10:12:30 AM
Copper	ND	0.0060		mg/L	1	8/19/2021 10:12:30 AM
Iron	0.030	0.020		mg/L	1	8/19/2021 10:12:30 AM
Magnesium	280	5.0		mg/L	5	8/19/2021 10:14:07 AM
Manganese	0.042	0.0020		mg/L	1	8/19/2021 10:12:30 AM
Molybdenum	ND	0.0080		mg/L	1	8/19/2021 10:12:30 AM
Nickel	ND	0.010		mg/L	1	8/19/2021 10:12:30 AM
Potassium	4.2	1.0		mg/L	1	8/19/2021 10:12:30 AM
Silver	ND	0.0050		mg/L	1	8/19/2021 10:12:30 AM
Sodium	140	5.0		mg/L	5	8/19/2021 10:14:07 AM
Zinc	0.019	0.010		mg/L	1	8/19/2021 10:12:30 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.0010		mg/L	1	8/19/2021 3:04:43 PM
Arsenic	0.0010	0.0010		mg/L	1	8/19/2021 3:04:43 PM
Lead	ND	0.0025		mg/L	5	8/19/2021 5:12:48 PM
Selenium	ND	0.0010		mg/L	1	8/19/2021 3:04:43 PM
Thallium	ND	0.0012		mg/L	5	8/19/2021 5:12:48 PM
Uranium	ND	0.0025		mg/L	5	8/19/2021 5:12:48 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: CCM
Benzene	ND	1.0		µg/L	1	8/19/2021 1:45:00 AM
Toluene	ND	1.0		µg/L	1	8/19/2021 1:45:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2021 1:45:00 AM
Naphthalene	ND	2.0		µg/L	1	8/19/2021 1:45:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 16

## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 8/17/2021 10:05:00 AM

Lab ID: 2108975-002

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 1:45:00 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 1:45:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2021 1:45:00 AM
Surr: 1,2-Dichloroethane-d4	81.8	70-130		%Rec	1	8/19/2021 1:45:00 AM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	8/19/2021 1:45:00 AM
Surr: Dibromofluoromethane	83.7	70-130		%Rec	1	8/19/2021 1:45:00 AM
Surr: Toluene-d8	93.5	70-130		%Rec	1	8/19/2021 1:45:00 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>CAS</b>
Conductivity	5500	10		µmhos/c	1	8/23/2021 1:37:38 PM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>CAS</b>
pH	7.27		H	pH units	1	8/19/2021 7:15:07 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>CAS</b>
Bicarbonate (As CaCO3)	148.2	20.00		mg/L Ca	1	8/19/2021 7:15:07 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/19/2021 7:15:07 PM
Total Alkalinity (as CaCO3)	148.2	20.00		mg/L Ca	1	8/19/2021 7:15:07 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>JMT</b>
Total Dissolved Solids	4200	100	*D	mg/L	1	8/26/2021 7:26:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 8/17/2021 10:55:00 AM

Lab ID: 2108975-003

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Fluoride	1.5	0.10		mg/L	1	8/18/2021 9:12:49 PM
Chloride	43	10		mg/L	20	8/18/2021 9:25:42 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/18/2021 9:12:49 PM
Bromide	0.13	0.10		mg/L	1	8/18/2021 9:12:49 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/18/2021 9:12:49 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/18/2021 9:12:49 PM
Sulfate	880	50	*	mg/L	100	8/20/2021 4:39:44 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Aluminum	ND	0.020		mg/L	1	8/19/2021 10:15:37 AM
Barium	0.019	0.0020		mg/L	1	8/19/2021 10:15:37 AM
Beryllium	ND	0.0020		mg/L	1	8/19/2021 10:15:37 AM
Boron	0.12	0.040		mg/L	1	8/19/2021 10:15:37 AM
Cadmium	ND	0.0020		mg/L	1	8/19/2021 10:15:37 AM
Calcium	280	5.0		mg/L	5	8/19/2021 10:17:05 AM
Chromium	ND	0.0060		mg/L	1	8/19/2021 10:15:37 AM
Cobalt	ND	0.0060		mg/L	1	8/19/2021 10:15:37 AM
Copper	ND	0.0060		mg/L	1	8/19/2021 10:15:37 AM
Iron	ND	0.020		mg/L	1	8/19/2021 10:15:37 AM
Magnesium	100	5.0		mg/L	5	8/19/2021 10:17:05 AM
Manganese	ND	0.0020		mg/L	1	8/19/2021 10:15:37 AM
Molybdenum	ND	0.0080		mg/L	1	8/19/2021 10:15:37 AM
Nickel	ND	0.010		mg/L	1	8/19/2021 10:15:37 AM
Potassium	2.7	1.0		mg/L	1	8/19/2021 10:15:37 AM
Silver	ND	0.0050		mg/L	1	8/19/2021 10:15:37 AM
Sodium	33	1.0		mg/L	1	8/19/2021 10:15:37 AM
Zinc	0.047	0.010		mg/L	1	8/19/2021 10:15:37 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.0010		mg/L	1	8/19/2021 3:09:28 PM
Arsenic	0.0014	0.0010		mg/L	1	8/19/2021 3:09:28 PM
Lead	ND	0.00050		mg/L	1	8/19/2021 3:09:28 PM
Selenium	ND	0.0010		mg/L	1	8/19/2021 3:09:28 PM
Thallium	ND	0.00025		mg/L	1	8/19/2021 3:09:28 PM
Uranium	0.00056	0.00050		mg/L	1	8/19/2021 3:09:28 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: CCM
Benzene	ND	1.0		µg/L	1	8/19/2021 2:08:00 AM
Toluene	ND	1.0		µg/L	1	8/19/2021 2:08:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2021 2:08:00 AM
Naphthalene	ND	2.0		µg/L	1	8/19/2021 2:08:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>		
*	Value exceeds Maximum Contaminant Level.	
D	Sample Diluted Due to Matrix	
H	Holding times for preparation or analysis exceeded	
ND	Not Detected at the Reporting Limit	
PQL	Practical Quantitative Limit	
S	% Recovery outside of range due to dilution or matrix	

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 8/17/2021 10:55:00 AM

Lab ID: 2108975-003

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 2:08:00 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 2:08:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2021 2:08:00 AM
Surr: 1,2-Dichloroethane-d4	81.1	70-130		%Rec	1	8/19/2021 2:08:00 AM
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	8/19/2021 2:08:00 AM
Surr: Dibromofluoromethane	82.2	70-130		%Rec	1	8/19/2021 2:08:00 AM
Surr: Toluene-d8	92.5	70-130		%Rec	1	8/19/2021 2:08:00 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>CAS</b>
Conductivity	1900	10		µmhos/c	1	8/23/2021 1:40:39 PM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>CAS</b>
pH	7.53		H	pH units	1	8/19/2021 7:25:21 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>CAS</b>
Bicarbonate (As CaCO3)	176.2	20.00		mg/L Ca	1	8/19/2021 7:25:21 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/19/2021 7:25:21 PM
Total Alkalinity (as CaCO3)	176.2	20.00		mg/L Ca	1	8/19/2021 7:25:21 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>JMT</b>
Total Dissolved Solids	1590	20.0	*	mg/L	1	8/26/2021 7:26:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 8/17/2021 11:35:00 AM

Lab ID: 2108975-004

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Fluoride	0.90	0.50		mg/L	5	8/18/2021 9:38:34 PM
Chloride	730	25	*	mg/L	50	8/20/2021 4:52:05 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/18/2021 9:38:34 PM
Bromide	1.1	0.50		mg/L	5	8/18/2021 9:38:34 PM
Nitrogen, Nitrate (As N)	2.3	0.50		mg/L	5	8/18/2021 9:38:34 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/18/2021 9:38:34 PM
Sulfate	1100	25	*	mg/L	50	8/20/2021 4:52:05 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: ELS
Aluminum	ND	0.020		mg/L	1	8/19/2021 10:18:33 AM
Barium	0.012	0.0020		mg/L	1	8/19/2021 10:18:33 AM
Beryllium	ND	0.0020		mg/L	1	8/19/2021 10:18:33 AM
Boron	0.071	0.040		mg/L	1	8/19/2021 10:18:33 AM
Cadmium	ND	0.0020		mg/L	1	8/19/2021 10:18:33 AM
Calcium	510	10		mg/L	10	8/19/2021 10:43:57 AM
Chromium	ND	0.0060		mg/L	1	8/19/2021 10:18:33 AM
Cobalt	ND	0.0060		mg/L	1	8/19/2021 10:18:33 AM
Copper	ND	0.0060		mg/L	1	8/19/2021 10:18:33 AM
Iron	0.039	0.020		mg/L	1	8/19/2021 10:18:33 AM
Magnesium	160	5.0		mg/L	5	8/19/2021 10:20:01 AM
Manganese	0.0029	0.0020		mg/L	1	8/19/2021 10:18:33 AM
Molybdenum	ND	0.0080		mg/L	1	8/19/2021 10:18:33 AM
Nickel	ND	0.010		mg/L	1	8/19/2021 10:18:33 AM
Potassium	4.5	1.0		mg/L	1	8/19/2021 10:18:33 AM
Silver	ND	0.0050		mg/L	1	8/19/2021 10:18:33 AM
Sodium	89	1.0		mg/L	1	8/19/2021 10:18:33 AM
Zinc	0.015	0.010		mg/L	1	8/19/2021 10:18:33 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.0010		mg/L	1	8/19/2021 3:14:12 PM
Arsenic	ND	0.0010		mg/L	1	8/19/2021 3:14:12 PM
Lead	ND	0.00050		mg/L	1	8/19/2021 3:14:12 PM
Selenium	0.012	0.0010		mg/L	1	8/19/2021 3:14:12 PM
Thallium	ND	0.00025		mg/L	1	8/19/2021 3:14:12 PM
Uranium	0.0054	0.00050		mg/L	1	8/19/2021 3:14:12 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: CCM
Benzene	ND	1.0		µg/L	1	8/19/2021 2:31:00 AM
Toluene	ND	1.0		µg/L	1	8/19/2021 2:31:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2021 2:31:00 AM
Naphthalene	ND	2.0		µg/L	1	8/19/2021 2:31:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## Analytical Report

Lab Order 2108975

Date Reported: 8/26/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 8/17/2021 11:35:00 AM

Lab ID: 2108975-004

Matrix: AQUEOUS

Received Date: 8/18/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 2:31:00 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2021 2:31:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2021 2:31:00 AM
Surr: 1,2-Dichloroethane-d4	83.3	70-130		%Rec	1	8/19/2021 2:31:00 AM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	8/19/2021 2:31:00 AM
Surr: Dibromofluoromethane	84.0	70-130		%Rec	1	8/19/2021 2:31:00 AM
Surr: Toluene-d8	90.3	70-130		%Rec	1	8/19/2021 2:31:00 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>CAS</b>
Conductivity	3800	10		µmhos/c	1	8/23/2021 1:43:39 PM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>CAS</b>
pH	7.40		H	pH units	1	8/19/2021 7:36:01 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>CAS</b>
Bicarbonate (As CaCO3)	152.5	20.00		mg/L Ca	1	8/19/2021 7:36:01 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/19/2021 7:36:01 PM
Total Alkalinity (as CaCO3)	152.5	20.00		mg/L Ca	1	8/19/2021 7:36:01 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>JMT</b>
Total Dissolved Solids	2920	40.0	*D	mg/L	1	8/26/2021 7:26:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1		MW-4		MW-3		MW-2		
	2108975-001		2108975-002		2108975-003		2108975-004		
<b>CATIONS</b>	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sodium	270	11.74	140	6.09	33	1.44	89	3.87	
Potassium	5.3	0.14	4.2	0.11	2.7	0.07	4.5	0.12	
Calcium	940	46.91	710	35.43	280	13.97	510.0	25.45	
Magnesium	370	30.45	280	23.05	100	8.23	160	13.17	
<b>Total Cations</b>		89.24		64.67		23.71		42.60	
<b>ANIONS</b>	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L meq/L
Sulfate	1800	37.48	1800	37.48	880	18.32	1100	22.90	
Chloride	1800	50.78	1100	31.03	43	1.21	730	20.59	
Bicarbonate (CaCO3)	186.4	3.73	148.2	2.96	176.2	3.52	152.5	3.05	
Carbonate (CaCO3)									
Phosphate (P)									
Nitrite (N)					-		2.3	0.16	
Nitrate (N)	2.0	0.11	2.5	0.13	1.5	0.08	0.90	0.05	
Fluoride	2.5	0.03	1.60	0.02	0.13	0.00	1.1	0.01	
Bromide									
<b>Total Anions</b>		92.11		71.62		23.14		46.77	
Elect. Cond. (µMhos/cm)	7500		5500		1900		3800		
<b>CATION/ANION RATIO</b>		0.97		0.90		1.02		0.91	
% Difference		2		5		1		5	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>									
TDS (measured)	5970		4200		1590		2920		
TDS (calculated)	5302		4127		1446		2697		
Ratio meas TDS:calc TDS		1.1		1.0		1.1		1.1	
Ratio Meas. TDS:EC		0.80		0.76		0.84		0.77	
Ratio Calc. TDS:EC		0.71		0.75		0.76		0.71	
Ratio of anion sum:EC		1.2		1.3		1.2		1.2	
Ratio of cation sum:EC		1.2		1.2		1.2		1.1	

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2108975

26-Aug-21

**Client:** Safety & Environmental Solutions**Project:** Lattion Pit

Sample ID: <b>MB</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>						
Client ID: <b>PBW</b>		Batch ID: <b>A80648</b>		RunNo: <b>80648</b>						
Prep Date:		Analysis Date: <b>8/19/2021</b>		SeqNo: <b>2844983</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: <b>LCS</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>						
Client ID: <b>LCSW</b>		Batch ID: <b>A80648</b>		RunNo: <b>80648</b>						
Prep Date:		Analysis Date: <b>8/19/2021</b>		SeqNo: <b>2844987</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	113	85	115			
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Calcium	50	1.0	50.00	0	99.6	85	115			
Chromium	0.49	0.0060	0.5000	0	98.5	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.49	0.020	0.5000	0	97.6	85	115			
Magnesium	50	1.0	50.00	0	99.2	85	115			
Manganese	0.49	0.0020	0.5000	0	98.2	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Potassium	48	1.0	50.00	0	96.6	85	115			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID: LCSW		Batch ID: A80648			RunNo: 80648					
Prep Date:		Analysis Date: 8/19/2021			SeqNo: 2844987		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	100	85	115			
Sodium	49	1.0	50.00	0	97.8	85	115			
Zinc	0.50	0.010	0.5000	0	99.4	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Dissolved Metals								
Client ID: PBW	Batch ID: A80677	RunNo: 80677								
Prep Date:	Analysis Date: 8/19/2021	SeqNo: 2846225 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								
Uranium	ND	0.00050								

Sample ID: LCS	SampType: LCS	TestCode: EPA 200.8: Dissolved Metals								
Client ID: LCSW	Batch ID: A80677	RunNo: 80677								
Prep Date:	Analysis Date: 8/19/2021	SeqNo: 2846227 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.9	85	115			
Arsenic	0.023	0.0010	0.02500	0	92.5	85	115			
Lead	0.012	0.00050	0.01250	0	93.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.9	85	115			
Thallium	0.012	0.00025	0.01250	0	93.8	85	115			
Uranium	0.012	0.00050	0.01250	0	93.2	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R80634</b>	RunNo: <b>80634</b>								
Prep Date:	Analysis Date: <b>8/18/2021</b>	SeqNo: <b>2844511</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R80634</b>	RunNo: <b>80634</b>								
Prep Date:	Analysis Date: <b>8/18/2021</b>	SeqNo: <b>2844512</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Chloride	4.8	0.50	5.000	0	96.7	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.7	90	110			
Bromide	2.5	0.10	2.500	0	99.8	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P)	4.6	0.50	5.000	0	91.1	90	110			

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R80714</b>	RunNo: <b>80714</b>								
Prep Date:	Analysis Date: <b>8/20/2021</b>	SeqNo: <b>2847517</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R80714</b>	RunNo: <b>80714</b>								
Prep Date:	Analysis Date: <b>8/20/2021</b>	SeqNo: <b>2847526</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.5	90	110			
Sulfate	9.7	0.50	10.00	0	97.2	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: 100ng 8260 lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List
Client ID: LCSW	Batch ID: SL80607	RunNo: 80607
Prep Date:	Analysis Date: 8/18/2021	SeqNo: 2844752 Units: µg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Benzene	21	1.0 20.00 0 103 70 130
Toluene	20	1.0 20.00 0 100 70 130
Surr: 1,2-Dichloroethane-d4	8.3	10.00 83.1 70 130
Surr: 4-Bromofluorobenzene	9.8	10.00 98.2 70 130
Surr: Dibromofluoromethane	8.6	10.00 86.4 70 130
Surr: Toluene-d8	9.4	10.00 93.6 70 130

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List
Client ID: PBW	Batch ID: SL80607	RunNo: 80607
Prep Date:	Analysis Date: 8/18/2021	SeqNo: 2844753 Units: µg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Benzene	ND	1.0
Toluene	ND	1.0
Ethylbenzene	ND	1.0
Naphthalene	ND	2.0
1-Methylnaphthalene	ND	4.0
2-Methylnaphthalene	ND	4.0
Xylenes, Total	ND	1.5
Surr: 1,2-Dichloroethane-d4	8.2	10.00 81.8 70 130
Surr: 4-Bromofluorobenzene	9.7	10.00 96.9 70 130
Surr: Dibromofluoromethane	8.4	10.00 84.4 70 130
Surr: Toluene-d8	9.3	10.00 93.4 70 130

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: <b>Ics-1 98.7uS eC</b>		SampType: <b>Ics</b>		TestCode: <b>SM2510B: Specific Conductance</b>						
Client ID: <b>LCSW</b>		Batch ID: <b>R80740</b>		RunNo: <b>80740</b>						
Prep Date:		Analysis Date: <b>8/23/2021</b>		SeqNo: <b>2848569</b>		Units: <b>µmhos/cm</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	98.70	0	103	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: <b>mb-1 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R80675</b>	RunNo: <b>80675</b>								
Prep Date:	Analysis Date: <b>8/19/2021</b>	SeqNo: <b>2846009</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-1 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R80675</b>	RunNo: <b>80675</b>								
Prep Date:	Analysis Date: <b>8/19/2021</b>	SeqNo: <b>2846011</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.68	20.00	80.00	0	99.6	90	110			

Sample ID: <b>mb-2 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R80675</b>	RunNo: <b>80675</b>								
Prep Date:	Analysis Date: <b>8/19/2021</b>	SeqNo: <b>2846049</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-2 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R80675</b>	RunNo: <b>80675</b>								
Prep Date:	Analysis Date: <b>8/19/2021</b>	SeqNo: <b>2846051</b>	Units: <b>mg/L CaCO3</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.64	20.00	80.00	0	99.6	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2108975

26-Aug-21

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB-62152	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 62152	RunNo: 80795								
Prep Date: 8/24/2021	Analysis Date: 8/26/2021	SeqNo: 2850857		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-62152	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 62152	RunNo: 80795								
Prep Date: 8/24/2021	Analysis Date: 8/26/2021	SeqNo: 2850858		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

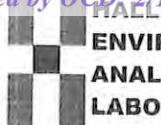
E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 16 of 16



**ENVIRONMENTAL  
ANALYSIS  
LABORATORY**

Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Safety & Environmental  
Solutions**

Work Order Number: **2108975**

RcptNo: 1

Received By: **Cheyenne Cason** 8/18/2021 8:35:00 AM

Completed By: **Isaiah Ortiz** 8/18/2021 1:00:27 PM

Reviewed By: **hfg 8/18/21**

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4$ " for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked for pH: 32 5 12 1  
4 6  
② or >12 unless noted

Adjusted? NO

Checked by: jn 8/18/21

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Not Present			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 06, 2022

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL: (575) 397-0510  
FAX: (575) 393-4388

RE: EOG Lattion Pit

OrderNo.: 2203C81

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/24/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: EOG Lattion Pit

Collection Date: 3/21/2022 9:00:00 AM

Lab ID: 2203C81-001

Matrix: AQUEOUS

Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LRN</b>
Fluoride	1.4	0.10		mg/L	1	3/25/2022 1:35:17 PM
Chloride	42	10		mg/L	20	3/25/2022 2:13:52 PM
Bromide	0.14	0.10		mg/L	1	3/25/2022 1:35:17 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	3/25/2022 1:35:17 PM
Sulfate	970	10	*	mg/L	20	3/25/2022 2:13:52 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/25/2022 7:35:31 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Aluminum	ND	0.020		mg/L	1	3/29/2022 12:47:44 PM
Barium	0.024	0.0020		mg/L	1	3/29/2022 12:47:44 PM
Beryllium	ND	0.0020		mg/L	1	3/29/2022 12:47:44 PM
Boron	0.14	0.040		mg/L	1	3/29/2022 12:47:44 PM
Cadmium	ND	0.0020		mg/L	1	3/29/2022 12:47:44 PM
Calcium	270	5.0		mg/L	5	3/29/2022 12:49:23 PM
Chromium	ND	0.0060		mg/L	1	3/29/2022 12:47:44 PM
Cobalt	ND	0.0060		mg/L	1	3/29/2022 12:47:44 PM
Iron	ND	0.020		mg/L	1	3/29/2022 12:47:44 PM
Magnesium	100	5.0		mg/L	5	3/29/2022 12:49:23 PM
Manganese	0.22	0.0020	*	mg/L	1	3/29/2022 12:47:44 PM
Molybdenum	ND	0.0080		mg/L	1	3/29/2022 12:47:44 PM
Nickel	ND	0.010		mg/L	1	3/29/2022 12:47:44 PM
Potassium	3.0	1.0		mg/L	1	3/29/2022 12:47:44 PM
Silver	ND	0.0050		mg/L	1	3/29/2022 12:47:44 PM
Sodium	40	1.0		mg/L	1	3/29/2022 12:47:44 PM
Zinc	0.014	0.010		mg/L	1	3/29/2022 12:47:44 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcb</b>
Antimony	ND	0.0050		mg/L	5	4/1/2022 2:11:57 PM
Arsenic	ND	0.0050		mg/L	5	3/30/2022 4:45:41 PM
Copper	ND	0.0050		mg/L	5	3/30/2022 4:45:41 PM
Lead	ND	0.0025		mg/L	5	3/30/2022 4:45:41 PM
Selenium	ND	0.0050		mg/L	5	3/30/2022 4:45:41 PM
Thallium	ND	0.0012		mg/L	5	3/30/2022 4:45:41 PM
Uranium	ND	0.0025		mg/L	5	4/1/2022 2:11:57 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	3/31/2022 7:39:00 PM
Toluene	ND	1.0		µg/L	1	3/31/2022 7:39:00 PM
Ethylbenzene	ND	1.0		µg/L	1	3/31/2022 7:39:00 PM
Naphthalene	ND	2.0		µg/L	1	3/31/2022 7:39:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 7:39:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

CLIENT: Safety & Environmental Solutions Client Sample ID: MW-3  
Project: EOG Lattion Pit Collection Date: 3/21/2022 9:00:00 AM  
Lab ID: 2203C81-001 Matrix: AQUEOUS Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
2-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 7:39:00 PM
Xylenes, Total	ND	1.5		µg/L	1	3/31/2022 7:39:00 PM
Surr: 1,2-Dichloroethane-d4	123	70-130		%Rec	1	3/31/2022 7:39:00 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	3/31/2022 7:39:00 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	3/31/2022 7:39:00 PM
Surr: Toluene-d8	95.8	70-130		%Rec	1	3/31/2022 7:39:00 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: MRA
Conductivity	1900	10		µmhos/c	1	3/31/2022 4:13:09 PM
SM4500-H+B / 9040C: PH						Analyst: LRN
pH	7.85		H	pH units	1	3/29/2022 7:39:45 PM
SM2320B: ALKALINITY						Analyst: LRN
Bicarbonate (As CaCO3)	183.0	20.00		mg/L Ca	1	3/29/2022 7:39:45 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/29/2022 7:39:45 PM
Total Alkalinity (as CaCO3)	183.0	20.00		mg/L Ca	1	3/29/2022 7:39:45 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	1630	20.0	*	mg/L	1	3/31/2022 11:22:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		



## Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: EOG Lattion Pit

Collection Date: 3/21/2022 10:30:00 AM

Lab ID: 2203C81-002

Matrix: AQUEOUS

Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LRN</b>
Fluoride	ND	2.0		mg/L	20	3/25/2022 2:39:36 PM
Chloride	1100	50	*	mg/L	100	3/29/2022 12:04:27 PM
Bromide	1.7	0.10		mg/L	1	3/25/2022 2:26:44 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/25/2022 2:39:36 PM
Sulfate	1700	50	*	mg/L	100	3/29/2022 12:04:27 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/25/2022 7:48:23 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Aluminum	ND	0.020		mg/L	1	3/29/2022 12:51:00 PM
Barium	0.014	0.0020		mg/L	1	3/29/2022 12:51:00 PM
Beryllium	ND	0.0020		mg/L	1	3/29/2022 12:51:00 PM
Boron	0.20	0.040		mg/L	1	3/29/2022 12:51:00 PM
Cadmium	ND	0.0020		mg/L	1	3/29/2022 12:51:00 PM
Calcium	730	10		mg/L	10	3/29/2022 1:51:12 PM
Chromium	ND	0.0060		mg/L	1	3/29/2022 12:51:00 PM
Cobalt	0.0066	0.0060		mg/L	1	3/29/2022 12:51:00 PM
Iron	ND	0.020		mg/L	1	3/29/2022 12:51:00 PM
Magnesium	300	5.0		mg/L	5	3/29/2022 12:52:38 PM
Manganese	0.035	0.0020		mg/L	1	3/29/2022 12:51:00 PM
Molybdenum	ND	0.0080		mg/L	1	3/29/2022 12:51:00 PM
Nickel	ND	0.010		mg/L	1	3/29/2022 12:51:00 PM
Potassium	4.0	1.0		mg/L	1	3/29/2022 12:51:00 PM
Silver	ND	0.0050		mg/L	1	3/29/2022 12:51:00 PM
Sodium	150	5.0		mg/L	5	3/29/2022 12:52:38 PM
Zinc	ND	0.010		mg/L	1	3/29/2022 12:51:00 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcb</b>
Antimony	ND	0.0050		mg/L	5	4/1/2022 2:14:38 PM
Arsenic	ND	0.0050		mg/L	5	3/30/2022 4:48:21 PM
Copper	ND	0.0050		mg/L	5	3/30/2022 4:48:21 PM
Lead	ND	0.0025		mg/L	5	3/30/2022 4:48:21 PM
Selenium	ND	0.0050		mg/L	5	3/30/2022 4:48:21 PM
Thallium	ND	0.0012		mg/L	5	3/30/2022 4:48:21 PM
Uranium	ND	0.0025		mg/L	5	4/1/2022 2:14:38 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	3/31/2022 8:02:00 PM
Toluene	ND	1.0		µg/L	1	3/31/2022 8:02:00 PM
Ethylbenzene	ND	1.0		µg/L	1	3/31/2022 8:02:00 PM
Naphthalene	ND	2.0		µg/L	1	3/31/2022 8:02:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 8:02:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

CLIENT: Safety & Environmental Solutions

Client Sample ID: MW-4

Project: EOG Lattion Pit

Collection Date: 3/21/2022 10:30:00 AM

Lab ID: 2203C81-002

Matrix: AQUEOUS

Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
2-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 8:02:00 PM
Xylenes, Total	ND	1.5		µg/L	1	3/31/2022 8:02:00 PM
Surr: 1,2-Dichloroethane-d4	126	70-130		%Rec	1	3/31/2022 8:02:00 PM
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	3/31/2022 8:02:00 PM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	3/31/2022 8:02:00 PM
Surr: Toluene-d8	96.0	70-130		%Rec	1	3/31/2022 8:02:00 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: MRA
Conductivity	5400	10		µmhos/c	1	3/31/2022 4:15:58 PM
SM4500-H+B / 9040C: PH						Analyst: LRN
pH	7.74		H	pH units	1	3/29/2022 7:50:22 PM
SM2320B: ALKALINITY						Analyst: LRN
Bicarbonate (As CaCO3)	142.7	20.00		mg/L Ca	1	3/29/2022 7:50:22 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/29/2022 7:50:22 PM
Total Alkalinity (as CaCO3)	142.7	20.00		mg/L Ca	1	3/29/2022 7:50:22 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	4280	100	*D	mg/L	1	3/31/2022 11:22:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: EOG Lattion Pit

Collection Date: 3/21/2022 11:20:00 AM

Lab ID: 2203C81-003

Matrix: AQUEOUS

Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LRN</b>
Fluoride	ND	2.0		mg/L	20	3/25/2022 3:31:03 PM
Chloride	690	25	*	mg/L	50	3/29/2022 12:16:52 PM
Bromide	1.0	0.10		mg/L	1	3/25/2022 3:18:11 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/25/2022 3:31:03 PM
Sulfate	1000	25	*	mg/L	50	3/29/2022 12:16:52 PM
Nitrate+Nitrite as N	2.3	1.0		mg/L	5	3/25/2022 8:39:59 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Aluminum	ND	0.020		mg/L	1	3/29/2022 12:59:33 PM
Barium	0.014	0.0020		mg/L	1	3/29/2022 12:59:33 PM
Beryllium	ND	0.0020		mg/L	1	3/29/2022 12:59:33 PM
Boron	0.083	0.040		mg/L	1	3/29/2022 12:59:33 PM
Cadmium	ND	0.0020		mg/L	1	3/29/2022 12:59:33 PM
Calcium	520	10		mg/L	10	3/29/2022 1:52:52 PM
Chromium	ND	0.0060		mg/L	1	3/29/2022 12:59:33 PM
Cobalt	ND	0.0060		mg/L	1	3/29/2022 12:59:33 PM
Iron	0.027	0.020		mg/L	1	3/29/2022 12:59:33 PM
Magnesium	160	5.0		mg/L	5	3/29/2022 1:01:10 PM
Manganese	0.0041	0.0020		mg/L	1	3/29/2022 12:59:33 PM
Molybdenum	ND	0.0080		mg/L	1	3/29/2022 12:59:33 PM
Nickel	ND	0.010		mg/L	1	3/29/2022 12:59:33 PM
Potassium	4.3	1.0		mg/L	1	3/29/2022 12:59:33 PM
Silver	ND	0.0050		mg/L	1	3/29/2022 12:59:33 PM
Sodium	100	1.0		mg/L	1	3/29/2022 12:59:33 PM
Zinc	0.011	0.010		mg/L	1	3/29/2022 12:59:33 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcb</b>
Antimony	ND	0.0050		mg/L	5	4/1/2022 2:17:19 PM
Arsenic	ND	0.0050		mg/L	5	3/30/2022 4:51:01 PM
Copper	ND	0.0050		mg/L	5	4/1/2022 2:17:19 PM
Lead	ND	0.0025		mg/L	5	3/30/2022 4:51:01 PM
Selenium	0.012	0.0050		mg/L	5	3/30/2022 4:51:01 PM
Thallium	ND	0.0012		mg/L	5	3/30/2022 4:51:01 PM
Uranium	0.0043	0.0025		mg/L	5	4/1/2022 2:17:19 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	3/31/2022 8:26:00 PM
Toluene	ND	1.0		µg/L	1	3/31/2022 8:26:00 PM
Ethylbenzene	ND	1.0		µg/L	1	3/31/2022 8:26:00 PM
Naphthalene	ND	2.0		µg/L	1	3/31/2022 8:26:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 8:26:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: EOG Lattion Pit

Collection Date: 3/21/2022 11:20:00 AM

Lab ID: 2203C81-003

Matrix: AQUEOUS

Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
2-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 8:26:00 PM
Xylenes, Total	ND	1.5		µg/L	1	3/31/2022 8:26:00 PM
Surr: 1,2-Dichloroethane-d4	124	70-130		%Rec	1	3/31/2022 8:26:00 PM
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	3/31/2022 8:26:00 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	3/31/2022 8:26:00 PM
Surr: Toluene-d8	95.7	70-130		%Rec	1	3/31/2022 8:26:00 PM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>MRA</b>
Conductivity	3600	10		µmhos/c	1	3/31/2022 4:18:49 PM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>LRN</b>
pH	7.83		H	pH units	1	3/29/2022 8:00:30 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>LRN</b>
Bicarbonate (As CaCO3)	152.7	20.00		mg/L Ca	1	3/29/2022 8:00:30 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/29/2022 8:00:30 PM
Total Alkalinity (as CaCO3)	152.7	20.00		mg/L Ca	1	3/29/2022 8:00:30 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>KS</b>
Total Dissolved Solids	2840	40.0	*D	mg/L	1	3/31/2022 11:22:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: EOG Lattion Pit

Collection Date: 3/22/2022 9:00:00 AM

Lab ID: 2203C81-004

Matrix: AQUEOUS

Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LRN</b>
Fluoride	2.0	2.0		mg/L	20	3/25/2022 3:56:46 PM
Chloride	1600	100	*	mg/L	200	3/29/2022 12:29:16 PM
Bromide	2.6	0.10		mg/L	1	3/25/2022 3:43:55 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	3/25/2022 3:56:46 PM
Sulfate	1500	100	*	mg/L	200	3/29/2022 12:29:16 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	3/25/2022 8:52:52 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>ELS</b>
Aluminum	ND	0.020		mg/L	1	3/29/2022 1:02:50 PM
Barium	0.027	0.0020		mg/L	1	3/29/2022 1:02:50 PM
Beryllium	ND	0.0020		mg/L	1	3/29/2022 1:02:50 PM
Boron	0.39	0.040		mg/L	1	3/29/2022 1:02:50 PM
Cadmium	ND	0.0020		mg/L	1	3/29/2022 1:02:50 PM
Calcium	1000	20		mg/L	20	3/29/2022 1:54:30 PM
Chromium	ND	0.0060		mg/L	1	3/29/2022 1:02:50 PM
Cobalt	0.0071	0.0060		mg/L	1	3/29/2022 1:02:50 PM
Iron	1.2	0.10	*	mg/L	5	3/29/2022 1:04:13 PM
Magnesium	340	5.0		mg/L	5	3/29/2022 1:04:13 PM
Manganese	0.33	0.0020	*	mg/L	1	3/29/2022 1:02:50 PM
Molybdenum	ND	0.0080		mg/L	1	3/29/2022 1:02:50 PM
Nickel	ND	0.010		mg/L	1	3/29/2022 1:02:50 PM
Potassium	6.1	1.0		mg/L	1	3/29/2022 1:02:50 PM
Silver	ND	0.0050		mg/L	1	3/29/2022 1:02:50 PM
Sodium	250	5.0		mg/L	5	3/29/2022 1:04:13 PM
Zinc	ND	0.010		mg/L	1	3/29/2022 1:02:50 PM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcb</b>
Antimony	ND	0.0050		mg/L	5	4/1/2022 2:20:01 PM
Arsenic	ND	0.0050		mg/L	5	3/30/2022 4:53:43 PM
Copper	ND	0.0050		mg/L	5	3/30/2022 4:53:43 PM
Lead	ND	0.0025		mg/L	5	3/30/2022 4:53:43 PM
Selenium	ND	0.0050		mg/L	5	3/30/2022 4:53:43 PM
Thallium	ND	0.0012		mg/L	5	3/30/2022 4:53:43 PM
Uranium	0.0036	0.0025		mg/L	5	4/1/2022 2:20:01 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	3/31/2022 8:49:00 PM
Toluene	ND	1.0		µg/L	1	3/31/2022 8:49:00 PM
Ethylbenzene	ND	1.0		µg/L	1	3/31/2022 8:49:00 PM
Naphthalene	ND	2.0		µg/L	1	3/31/2022 8:49:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 8:49:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2203C81

Date Reported: 4/6/2022

CLIENT: Safety & Environmental Solutions Client Sample ID: MW-1  
Project: EOG Lattion Pit Collection Date: 3/22/2022 9:00:00 AM  
Lab ID: 2203C81-004 Matrix: AQUEOUS Received Date: 3/24/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
2-Methylnaphthalene	ND	4.0		µg/L	1	3/31/2022 8:49:00 PM
Xylenes, Total	ND	1.5		µg/L	1	3/31/2022 8:49:00 PM
Surr: 1,2-Dichloroethane-d4	125	70-130		%Rec	1	3/31/2022 8:49:00 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	3/31/2022 8:49:00 PM
Surr: Dibromofluoromethane	116	70-130		%Rec	1	3/31/2022 8:49:00 PM
Surr: Toluene-d8	95.6	70-130		%Rec	1	3/31/2022 8:49:00 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: MRA
Conductivity	7200	10		µmhos/c	1	3/31/2022 4:21:41 PM
SM4500-H+B / 9040C: PH						Analyst: LRN
pH	7.76		H	pH units	1	3/29/2022 8:10:43 PM
SM2320B: ALKALINITY						Analyst: LRN
Bicarbonate (As CaCO3)	152.8	20.00		mg/L Ca	1	3/29/2022 8:10:43 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/29/2022 8:10:43 PM
Total Alkalinity (as CaCO3)	152.8	20.00		mg/L Ca	1	3/29/2022 8:10:43 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	6140	40.0	*D	mg/L	1	3/31/2022 11:22:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-3 2203C81-001		MW-4 2203C81-002		MW-2 2203C81-003		MW-1 2203C81-004					
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sodium	40	1.74	150	6.52	100	4.35	250	10.87				
Potassium	3.0	0.08	4.0	0.10	4.3	0.11	6.1	0.16				
Calcium	270	13.47	730	36.43	520	25.95	1000	49.90				
Magnesium	100	8.23	300	24.69	160	13.17	340.0	27.98				
<b>Total Cations</b>		23.52		67.75		43.58		88.91				
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sulfate	970	20.20	1700	35.39	1000	20.82	1500	31.23				
Chloride	42.0	1.18	1100.0	31.03	690.0	19.46	1600	45.13				
Bicarbonate (CaCO3)	183.0	3.66	142.7	2.85	152.7	3.05	152.8	3.05				
Carbonate (CaCO3)												
Phosphate (P)												
Nitrite (N)					2.3	0.16						
Nitrate (N)					-							
Fluoride	1.4	0.07					2.0	0.11				
Bromide	0.14	0.00	1.7	0.02	1.0	0.01	2.6	0.03				
<b>Total Anions</b>		25.11		69.30		43.51		79.56				
Elect. Cond. (µMhos/cm)	1900		5400		3600		7200					
<b>CATION/ANION RATIO</b>		0.94		0.98		1.00		1.12				
% Difference		3		1		0		6				
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>												
TDS (measured)	1630		4280		2840		6140					
TDS (calculated)	1536		4071		2567		4792					
Ratio meas TDS:calc TDS		1.1		1.1		1.1		1.3				
Ratio Meas. TDS:EC		0.86		0.79		0.79		0.85				
Ratio Calc. TDS:EC		0.81		0.75		0.71		0.67				
Ratio of anion sum:EC		1.3		1.3		1.2		1.1				
Ratio of cation sum:EC		1.2		1.3		1.2		1.2				

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

### GENERALLY ACCEPTED RANGES

Cation/Anion balance: 0-3 meq/L-0.2 meq/L, 3-10 meq/L-2%, >10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2203C81

28-Jul-22

**Client:** Safety & Environmental Solutions**Project:** EOG Lattion Pit

Sample ID: <b>MB</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>						
Client ID: <b>PBW</b>		Batch ID: <b>A86825</b>		RunNo: <b>86825</b>						
Prep Date:		Analysis Date: <b>3/29/2022</b>		SeqNo: <b>3066292</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: <b>LCS</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Dissolved Metals</b>						
Client ID: <b>LCSW</b>		Batch ID: <b>A86825</b>		RunNo: <b>86825</b>						
Prep Date:		Analysis Date: <b>3/29/2022</b>		SeqNo: <b>3066296</b>		Units: <b>mg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	114	85	115			
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Boron	0.56	0.040	0.5000	0	111	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	49	1.0	50.00	0	97.4	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.4	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Magnesium	50	1.0	50.00	0	99.1	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.49	0.010	0.5000	0	99.0	85	115			
Potassium	50	1.0	50.00	0	99.2	85	115			
Silver	0.11	0.0050	0.1000	0	108	85	115			
Sodium	50	1.0	50.00	0	99.9	85	115			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81

28-Jul-22

Client: Safety & Environmental Solutions

Project: EOG Lattion Pit

Sample ID: LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: A86825		RunNo: 86825						
Prep Date:		Analysis Date: 3/29/2022		SeqNo: 3066296		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.49	0.010	0.5000	0	98.7	85	115			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81

28-Jul-22

Client: Safety &amp; Environmental Solutions

Project: EOG Lattion Pit

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>B86848</b>	RunNo: <b>86848</b>								
Prep Date:	Analysis Date: <b>3/30/2022</b>	SeqNo: <b>3069428</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>B86848</b>	RunNo: <b>86848</b>								
Prep Date:	Analysis Date: <b>3/30/2022</b>	SeqNo: <b>3069430</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.025	0.0010	0.02500	0	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	98.4	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			
Thallium	0.012	0.00025	0.01250	0	99.4	85	115			

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>B86946</b>	RunNo: <b>86946</b>								
Prep Date:	Analysis Date: <b>4/1/2022</b>	SeqNo: <b>3072048</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Copper	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA 200.8: Dissolved Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>B86946</b>	RunNo: <b>86946</b>								
Prep Date:	Analysis Date: <b>4/1/2022</b>	SeqNo: <b>3072050</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	91.2	85	115			
Copper	0.025	0.0010	0.02500	0	99.1	85	115			
Uranium	0.013	0.00050	0.01250	0	104	85	115			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 11 of 17

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81  
28-Jul-22

Client: Safety & Environmental Solutions  
Project: EOG Lattion Pit

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R86761	RunNo: 86761								
Prep Date:	Analysis Date: 3/25/2022	SeqNo: 3063723 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R86761	RunNo: 86761								
Prep Date:	Analysis Date: 3/25/2022	SeqNo: 3063724 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Chloride	4.7	0.50	5.000	0	94.5	90	110			
Bromide	2.5	0.10	2.500	0	98.7	90	110			
Phosphorus, Orthophosphate (As P)	4.6	0.50	5.000	0	92.5	90	110			
Sulfate	9.4	0.50	10.00	0	94.2	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R86761	RunNo: 86761								
Prep Date:	Analysis Date: 3/25/2022	SeqNo: 3063774 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: MB	SampType: Mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R86833	RunNo: 86833								
Prep Date:	Analysis Date: 3/29/2022	SeqNo: 3066895 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81  
28-Jul-22

Client: Safety & Environmental Solutions  
Project: EOG Lattion Pit

Sample ID: LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID: LCSW		Batch ID: R86833			RunNo: 86833					
Prep Date:		Analysis Date: 3/29/2022			SeqNo: 3066896		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	9.4	0.50	10.00	0	93.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Estimated value
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix interference	



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81

28-Jul-22

Client: Safety &amp; Environmental Solutions

Project: EOG Lattion Pit

Sample ID: <b>100ng lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8260: Volatiles Short List</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>SL86909</b>			RunNo: <b>86909</b>						
Prep Date:	Analysis Date: <b>3/31/2022</b>			SeqNo: <b>3073006</b>		Units: <b>µg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	117	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	12		10.00		123	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	9.7		10.00		97.2	70	130			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8260: Volatiles Short List</b>						
Client ID: <b>PBW</b>	Batch ID: <b>SL86909</b>			RunNo: <b>86909</b>						
Prep Date:	Analysis Date: <b>3/31/2022</b>			SeqNo: <b>3073007</b>		Units: <b>µg/L</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		122	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	9.5		10.00		95.0	70	130			

### Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81  
28-Jul-22

Client: Safety & Environmental Solutions  
Project: EOG Lattion Pit

Sample ID: Ics-1 100.2uS eC	SampType: Ics		TestCode: SM2510B: Specific Conductance							
Client ID: LCSW	Batch ID: R86894		RunNo: 86894							
Prep Date:	Analysis Date: 3/31/2022		SeqNo: 3069794		Units: µmhos/cm					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	100.2	0	100	85	115			

Sample ID: Ics-2 100.2uS eC	SampType: Ics		TestCode: SM2510B: Specific Conductance							
Client ID: LCSW	Batch ID: R86894		RunNo: 86894							
Prep Date:	Analysis Date: 3/31/2022		SeqNo: 3069819		Units: µmhos/cm					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	100.2	0	101	85	115			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.
  - D Sample Diluted Due to Matrix
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quantitative Limit
  - S % Recovery outside of range due to dilution or matrix interference

- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81

28-Jul-22

Client: Safety &amp; Environmental Solutions

Project: EOG Lattion Pit

Sample ID: <b>mb-1 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R86834</b>	RunNo: <b>86834</b>								
Prep Date:	Analysis Date: <b>3/29/2022</b>	SeqNo: <b>3066986</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-1 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R86834</b>	RunNo: <b>86834</b>								
Prep Date:	Analysis Date: <b>3/29/2022</b>	SeqNo: <b>3066987</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	73.00	20.00	80.00	0	91.2	90	110			

Sample ID: <b>mb-2 alk</b>	SampType: <b>mblk</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R86834</b>	RunNo: <b>86834</b>								
Prep Date:	Analysis Date: <b>3/29/2022</b>	SeqNo: <b>3067009</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: <b>lcs-2 alk</b>	SampType: <b>lcs</b>	TestCode: <b>SM2320B: Alkalinity</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R86834</b>	RunNo: <b>86834</b>								
Prep Date:	Analysis Date: <b>3/29/2022</b>	SeqNo: <b>3067010</b> Units: <b>mg/L CaCO3</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	72.56	20.00	80.00	0	90.7	90	110			

### Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2203C81

28-Jul-22

Client: Safety & Environmental Solutions

Project: EOG Lattion Pit

Sample ID: MB-66429	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 66429	RunNo: 86876								
Prep Date: 3/28/2022	Analysis Date: 3/31/2022	SeqNo: 3069219 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-66429	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 66429	RunNo: 86876								
Prep Date: 3/28/2022	Analysis Date: 3/31/2022	SeqNo: 3069220 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1080	20.0	1000	0	108	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

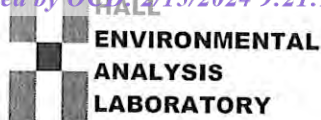
E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 17 of 17



## Sample Log-In Check List

Client Name: Safety & Environmental Solutions

Work Order Number: 2203C81

RcptNo: 1

Received By: Cheyenne Cason 3/24/2022 7:30:00 AM

Completed By: Sean Livingston 3/24/2022 9:01:08 AM

Reviewed By: *MPG* 3/24/22

*Handwritten signatures*

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 8  
(2 or >12 unless noted)

Adjusted? No

Checked by: TMC 3/24/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good				
2	4.4	Good				







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

September 09, 2022

Dave Boyer  
Safety & Environmental Solutions  
PO Box 1613  
Hobbs, NM 88241  
TEL:  
FAX

RE: Lattion Pit

OrderNo.: 2208430

Dear Dave Boyer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/6/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2208430

Date Reported: 9/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-1

Project: Lattion Pit

Collection Date: 8/4/2022 9:30:00 AM

Lab ID: 2208430-001

Matrix: AQUEOUS

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Fluoride	3.2	2.0		mg/L	20	8/8/2022 2:17:24 PM
Chloride	1500	100	*	mg/L	200	8/17/2022 9:06:57 PM
Bromide	3.2	2.0		mg/L	20	8/8/2022 2:17:24 PM
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	8/8/2022 2:17:24 PM
Sulfate	1800	25	*	mg/L	50	8/15/2022 5:14:12 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/8/2022 11:56:23 PM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>JRR</b>
Aluminum	ND	0.20		mg/L	10	8/23/2022 10:52:08 AM
Barium	ND	0.020		mg/L	10	8/23/2022 10:52:08 AM
Beryllium	ND	0.020		mg/L	10	8/23/2022 10:52:08 AM
Boron	ND	0.40		mg/L	10	8/23/2022 10:52:08 AM
Cadmium	ND	0.020		mg/L	10	8/23/2022 10:52:08 AM
Calcium	920	10		mg/L	10	8/23/2022 10:52:08 AM
Chromium	ND	0.060		mg/L	10	8/23/2022 10:52:08 AM
Cobalt	ND	0.060		mg/L	10	8/23/2022 10:52:08 AM
Copper	ND	0.060		mg/L	10	8/23/2022 10:52:08 AM
Iron	ND	0.20		mg/L	10	8/23/2022 10:52:08 AM
Magnesium	330	10		mg/L	10	8/23/2022 10:52:08 AM
Manganese	0.13	0.020	*	mg/L	10	8/23/2022 10:52:08 AM
Molybdenum	ND	0.080		mg/L	10	8/23/2022 10:52:08 AM
Nickel	ND	0.10		mg/L	10	8/23/2022 10:52:08 AM
Potassium	ND	10		mg/L	10	8/23/2022 10:52:08 AM
Silver	ND	0.050		mg/L	10	8/23/2022 10:52:08 AM
Sodium	220	10		mg/L	10	8/23/2022 10:52:08 AM
Zinc	0.29	0.10		mg/L	10	8/23/2022 10:52:08 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcv</b>
Antimony	ND	0.0010		mg/L	1	8/10/2022 6:40:32 PM
Arsenic	0.0016	0.0010		mg/L	1	8/10/2022 6:40:32 PM
Lead	ND	0.00050		mg/L	1	8/10/2022 6:40:32 PM
Selenium	ND	0.0010		mg/L	1	8/10/2022 6:40:32 PM
Thallium	ND	0.00025		mg/L	1	8/10/2022 6:40:32 PM
Uranium	0.00090	0.00050		mg/L	1	8/10/2022 6:40:32 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	8/11/2022 1:49:00 AM
Toluene	ND	1.0		µg/L	1	8/11/2022 1:49:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/11/2022 1:49:00 AM
Naphthalene	ND	2.0		µg/L	1	8/11/2022 1:49:00 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 1:49:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 2208430  
Date Reported: 9/9/2022

CLIENT: Safety & Environmental Solutions      Client Sample ID: MW-1  
Project: Lattion Pit      Collection Date: 8/4/2022 9:30:00 AM  
Lab ID: 2208430-001      Matrix: AQUEOUS      Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 1:49:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/11/2022 1:49:00 AM
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	8/11/2022 1:49:00 AM
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	8/11/2022 1:49:00 AM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	8/11/2022 1:49:00 AM
Surr: Toluene-d8	89.4	70-130		%Rec	1	8/11/2022 1:49:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	6800	10		µmhos/c	1	8/10/2022 6:52:02 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.53		H	pH units	1	8/12/2022 4:02:23 PM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	124.9	20.00		mg/L Ca	1	8/12/2022 4:02:23 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/12/2022 4:02:23 PM
Total Alkalinity (as CaCO3)	124.9	20.00		mg/L Ca	1	8/12/2022 4:02:23 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: SNS
Total Dissolved Solids	5990	20.0	*	mg/L	1	8/12/2022 4:08:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208430

Date Reported: 9/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-3

Project: Lattion Pit

Collection Date: 8/4/2022 10:10:00 AM

Lab ID: 2208430-002

Matrix: AQUEOUS

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Fluoride	1.3	0.10		mg/L	1	8/8/2022 2:30:16 PM
Chloride	42	10		mg/L	20	8/8/2022 2:43:08 PM
Bromide	0.15	0.10		mg/L	1	8/8/2022 2:30:16 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	8/8/2022 2:30:16 PM
Sulfate	860	25	*	mg/L	50	8/15/2022 5:39:55 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/9/2022 12:09:16 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>JRR</b>
Aluminum	ND	0.20		mg/L	10	8/23/2022 10:56:31 AM
Barium	0.021	0.020		mg/L	10	8/23/2022 10:56:31 AM
Beryllium	ND	0.020		mg/L	10	8/23/2022 10:56:31 AM
Boron	ND	0.40		mg/L	10	8/23/2022 10:56:31 AM
Cadmium	ND	0.020		mg/L	10	8/23/2022 10:56:31 AM
Calcium	280	10		mg/L	10	8/23/2022 10:56:31 AM
Chromium	ND	0.060		mg/L	10	8/23/2022 10:56:31 AM
Cobalt	ND	0.060		mg/L	10	8/23/2022 10:56:31 AM
Copper	ND	0.060		mg/L	10	8/23/2022 10:56:31 AM
Iron	ND	0.20		mg/L	10	8/23/2022 10:56:31 AM
Magnesium	110	10		mg/L	10	8/23/2022 10:56:31 AM
Manganese	ND	0.020		mg/L	10	8/23/2022 10:56:31 AM
Molybdenum	ND	0.080		mg/L	10	8/23/2022 10:56:31 AM
Nickel	ND	0.10		mg/L	10	8/23/2022 10:56:31 AM
Potassium	ND	10		mg/L	10	8/23/2022 10:56:31 AM
Silver	ND	0.050		mg/L	10	8/23/2022 10:56:31 AM
Sodium	34	10		mg/L	10	8/23/2022 10:56:31 AM
Zinc	0.19	0.10		mg/L	10	8/23/2022 10:56:31 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcv</b>
Antimony	ND	0.0010		mg/L	1	8/10/2022 6:43:13 PM
Arsenic	0.0024	0.0010		mg/L	1	8/10/2022 6:43:13 PM
Lead	ND	0.00050		mg/L	1	8/10/2022 6:43:13 PM
Selenium	ND	0.0010		mg/L	1	8/10/2022 6:43:13 PM
Thallium	ND	0.00025		mg/L	1	8/10/2022 6:43:13 PM
Uranium	0.00057	0.00050		mg/L	1	8/10/2022 6:43:13 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	8/11/2022 2:12:00 AM
Toluene	ND	1.0		µg/L	1	8/11/2022 2:12:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/11/2022 2:12:00 AM
Naphthalene	ND	2.0		µg/L	1	8/11/2022 2:12:00 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 2:12:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 2208430  
Date Reported: 9/9/2022

CLIENT: Safety & Environmental Solutions      Client Sample ID: MW-3  
Project: Lattion Pit      Collection Date: 8/4/2022 10:10:00 AM  
Lab ID: 2208430-002      Matrix: AQUEOUS      Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 2:12:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/11/2022 2:12:00 AM
Surr: 1,2-Dichloroethane-d4	117	70-130		%Rec	1	8/11/2022 2:12:00 AM
Surr: 4-Bromofluorobenzene	96.3	70-130		%Rec	1	8/11/2022 2:12:00 AM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	8/11/2022 2:12:00 AM
Surr: Toluene-d8	90.0	70-130		%Rec	1	8/11/2022 2:12:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	1900	10		µmhos/c	1	8/10/2022 7:02:16 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.88		H	pH units	1	8/12/2022 4:11:23 PM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	195.5	20.00		mg/L Ca	1	8/12/2022 4:11:23 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/12/2022 4:11:23 PM
Total Alkalinity (as CaCO3)	195.5	20.00		mg/L Ca	1	8/12/2022 4:11:23 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: SNS
Total Dissolved Solids	1670	20.0	*	mg/L	1	8/12/2022 4:08:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208430

Date Reported: 9/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-4

Project: Lattion Pit

Collection Date: 8/4/2022 10:50:00 AM

Lab ID: 2208430-003

Matrix: AQUEOUS

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Fluoride	2.2	2.0		mg/L	20	8/8/2022 3:34:34 PM
Chloride	1000	50	*	mg/L	100	8/18/2022 5:01:26 PM
Bromide	1.6	0.10		mg/L	1	8/8/2022 3:21:43 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	8/8/2022 3:21:43 PM
Sulfate	1700	25	*	mg/L	50	8/15/2022 5:52:48 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/9/2022 12:22:07 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: <b>JRR</b>
Aluminum	ND	0.20		mg/L	10	8/23/2022 11:00:49 AM
Barium	ND	0.020		mg/L	10	8/23/2022 11:00:49 AM
Beryllium	ND	0.020		mg/L	10	8/23/2022 11:00:49 AM
Boron	ND	0.40		mg/L	10	8/23/2022 11:00:49 AM
Cadmium	ND	0.020		mg/L	10	8/23/2022 11:00:49 AM
Calcium	720	10		mg/L	10	8/23/2022 11:00:49 AM
Chromium	ND	0.060		mg/L	10	8/23/2022 11:00:49 AM
Cobalt	ND	0.060		mg/L	10	8/23/2022 11:00:49 AM
Copper	ND	0.060		mg/L	10	8/23/2022 11:00:49 AM
Iron	ND	0.20		mg/L	10	8/23/2022 11:00:49 AM
Magnesium	290	10		mg/L	10	8/23/2022 11:00:49 AM
Manganese	0.036	0.020		mg/L	10	8/23/2022 11:00:49 AM
Molybdenum	ND	0.080		mg/L	10	8/23/2022 11:00:49 AM
Nickel	ND	0.10		mg/L	10	8/23/2022 11:00:49 AM
Potassium	ND	10		mg/L	10	8/23/2022 11:00:49 AM
Silver	ND	0.050		mg/L	10	8/23/2022 11:00:49 AM
Sodium	120	10		mg/L	10	8/23/2022 11:00:49 AM
Zinc	ND	0.10		mg/L	10	8/23/2022 11:00:49 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: <b>bcv</b>
Antimony	ND	0.0010		mg/L	1	8/10/2022 6:45:55 PM
Arsenic	0.0016	0.0010		mg/L	1	8/10/2022 6:45:55 PM
Lead	ND	0.00050		mg/L	1	8/10/2022 6:45:55 PM
Selenium	ND	0.0010		mg/L	1	8/10/2022 6:45:55 PM
Thallium	ND	0.00025		mg/L	1	8/10/2022 6:45:55 PM
Uranium	0.00096	0.00050		mg/L	1	8/10/2022 6:45:55 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	8/11/2022 2:35:00 AM
Toluene	ND	1.0		µg/L	1	8/11/2022 2:35:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/11/2022 2:35:00 AM
Naphthalene	ND	2.0		µg/L	1	8/11/2022 2:35:00 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 2:35:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit



Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
Lab Order 2208430  
Date Reported: 9/9/2022

CLIENT: Safety & Environmental Solutions      Client Sample ID: MW-4  
Project: Lattion Pit      Collection Date: 8/4/2022 10:50:00 AM  
Lab ID: 2208430-003      Matrix: AQUEOUS      Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 2:35:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/11/2022 2:35:00 AM
Surr: 1,2-Dichloroethane-d4	116	70-130		%Rec	1	8/11/2022 2:35:00 AM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	8/11/2022 2:35:00 AM
Surr: Dibromofluoromethane	110	70-130		%Rec	1	8/11/2022 2:35:00 AM
Surr: Toluene-d8	91.5	70-130		%Rec	1	8/11/2022 2:35:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	5400	10		µmhos/c	1	8/10/2022 7:13:24 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.54		H	pH units	1	8/12/2022 4:22:05 PM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	140.0	20.00		mg/L Ca	1	8/12/2022 4:22:05 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/12/2022 4:22:05 PM
Total Alkalinity (as CaCO3)	140.0	20.00		mg/L Ca	1	8/12/2022 4:22:05 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: SNS
Total Dissolved Solids	4640	20.0	*	mg/L	1	8/12/2022 4:08:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208430

Date Reported: 9/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 8/4/2022 11:20:00 AM

Lab ID: 2208430-004

Matrix: AQUEOUS

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Fluoride	0.75	0.50		mg/L	5	8/25/2022 9:13:11 PM
Chloride	890	25	*	mg/L	50	8/18/2022 5:14:19 PM
Bromide	1.2	0.10		mg/L	1	8/8/2022 3:47:26 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	8/8/2022 3:47:26 PM
Sulfate	1100	25	*	mg/L	50	8/15/2022 6:18:31 PM
Nitrate+Nitrite as N	1.9	1.0		mg/L	5	8/9/2022 12:34:59 AM
<b>EPA METHOD 200.7: DISSOLVED METALS</b>						Analyst: JRR
Aluminum	ND	0.20		mg/L	10	8/23/2022 11:05:11 AM
Barium	ND	0.020		mg/L	10	8/23/2022 11:05:11 AM
Beryllium	ND	0.020		mg/L	10	8/23/2022 11:05:11 AM
Boron	ND	0.40		mg/L	10	8/23/2022 11:05:11 AM
Cadmium	ND	0.020		mg/L	10	8/23/2022 11:05:11 AM
Calcium	570	10		mg/L	10	8/23/2022 11:05:11 AM
Chromium	ND	0.060		mg/L	10	8/23/2022 11:05:11 AM
Cobalt	ND	0.060		mg/L	10	8/23/2022 11:05:11 AM
Copper	ND	0.060		mg/L	10	8/23/2022 11:05:11 AM
Iron	ND	0.20		mg/L	10	8/23/2022 11:05:11 AM
Magnesium	180	10		mg/L	10	8/23/2022 11:05:11 AM
Manganese	ND	0.020		mg/L	10	8/23/2022 11:05:11 AM
Molybdenum	ND	0.080		mg/L	10	8/23/2022 11:05:11 AM
Nickel	ND	0.10		mg/L	10	8/23/2022 11:05:11 AM
Potassium	ND	10		mg/L	10	8/23/2022 11:05:11 AM
Silver	ND	0.050		mg/L	10	8/23/2022 11:05:11 AM
Sodium	99	10		mg/L	10	8/23/2022 11:05:11 AM
Zinc	ND	0.10		mg/L	10	8/23/2022 11:05:11 AM
<b>EPA 200.8: DISSOLVED METALS</b>						Analyst: bcv
Antimony	ND	0.0010		mg/L	1	8/10/2022 6:48:36 PM
Arsenic	0.0011	0.0010		mg/L	1	8/10/2022 6:48:36 PM
Lead	ND	0.00050		mg/L	1	8/10/2022 6:48:36 PM
Selenium	0.016	0.0010		mg/L	1	8/10/2022 6:48:36 PM
Thallium	ND	0.00025		mg/L	1	8/10/2022 6:48:36 PM
Uranium	0.0056	0.00050		mg/L	1	8/10/2022 6:48:36 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: CCM
Benzene	ND	1.0		µg/L	1	8/11/2022 2:58:00 AM
Toluene	ND	1.0		µg/L	1	8/11/2022 2:58:00 AM
Ethylbenzene	ND	1.0		µg/L	1	8/11/2022 2:58:00 AM
Naphthalene	ND	2.0		µg/L	1	8/11/2022 2:58:00 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 2:58:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>		* Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix	
H	Holding times for preparation or analysis exceeded	
ND	Not Detected at the Reporting Limit	
PQL	Practical Quantitative Limit	
S	% Recovery outside of range due to dilution or matrix interference	

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

## Analytical Report

Lab Order 2208430

Date Reported: 9/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety &amp; Environmental Solutions

Client Sample ID: MW-2

Project: Lattion Pit

Collection Date: 8/4/2022 11:20:00 AM

Lab ID: 2208430-004

Matrix: AQUEOUS

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: <b>CCM</b>
2-Methylnaphthalene	ND	4.0		µg/L	1	8/11/2022 2:58:00 AM
Xylenes, Total	ND	1.5		µg/L	1	8/11/2022 2:58:00 AM
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	8/11/2022 2:58:00 AM
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	8/11/2022 2:58:00 AM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	8/11/2022 2:58:00 AM
Surr: Toluene-d8	90.6	70-130		%Rec	1	8/11/2022 2:58:00 AM
<b>SM2510B: SPECIFIC CONDUCTANCE</b>						Analyst: <b>CAS</b>
Conductivity	4200	10		µmhos/c	1	8/10/2022 7:40:00 PM
<b>SM4500-H+B / 9040C: PH</b>						Analyst: <b>CAS</b>
pH	7.69		H	pH units	1	8/12/2022 4:31:35 PM
<b>SM2320B: ALKALINITY</b>						Analyst: <b>CAS</b>
Bicarbonate (As CaCO3)	150.4	20.00		mg/L Ca	1	8/12/2022 4:31:35 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/12/2022 4:31:35 PM
Total Alkalinity (as CaCO3)	150.4	20.00		mg/L Ca	1	8/12/2022 4:31:35 PM
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>						Analyst: <b>SNS</b>
Total Dissolved Solids	3530	20.0	*	mg/L	1	8/12/2022 4:08:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	MW-1	MW-3	MW-4	MW-2	
2208430-001	2208430-002	2208430-003	2208430-004		
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
meq/L	meq/L	meq/L	meq/L	meq/L	meq/L
Sodium	220 9.57	34 1.48	120 5.22	99 4.31	
Potassium					
Calcium	920 45.91	280 13.97	720 35.93	570 28.44	
Magnesium	330 27.16	110 9.05	290 23.87	180 14.81	
<b>Total Cations</b>	82.64	24.50	65.02	47.56	
<b>ANIONS</b>	mg/L	mg/L	mg/L	mg/L	mg/L
	meq/L	meq/L	meq/L	meq/L	meq/L
Sulfate	1800 37.48	860 17.91	1700 35.39	1100 22.90	
Chloride	1500 42.31	42 1.18	1000 28.21	890 25.11	
Bicarbonate (CaCO3)	124.9 2.50	195.5 3.91	140.0 2.80	150.4 3.01	
Carbonate (CaCO3)					
Phosphate (P)					
Nitrite (N)					
Nitrate (N)	3.2 0.17	1.3 0.07	-	1.9 0.14	
Fluoride	3.2 0.04	0.15 0.00	1.6 0.02	1.2 0.02	
Bromide					
<b>Total Anions</b>	82.49	23.07	66.42	51.16	
Elect. Cond. (µMhos/cm)	6800	1900	5400	4200	
<b>CATION/ANION RATIO</b>	1.00	1.06	0.98	0.93	
% Difference	0	3	1	4	
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>					
TDS (measured)	5990	1670	4640	3530	
TDS (calculated)	4851	1445	3916	2939	
Ratio meas TDS:calc TDS	1.2	1.2	1.2	1.2	
Ratio Meas. TDS:EC	0.88	0.88	0.86	0.84	
Ratio Calc. TDS:EC	0.71	0.76	0.73	0.70	
Ratio of anion sum:EC	1.2	1.2	1.2	1.2	
Ratio of cation sum:EC	1.2	1.3	1.2	1.1	

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio Measured TDS:EC--0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430

09-Sep-22

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB-A		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: PBW		Batch ID: A90525		RunNo: 90525						
Prep Date:		Analysis Date: 8/23/2022		SeqNo: 3232956		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: A90525		RunNo: 90525						
Prep Date:		Analysis Date: 8/23/2022		SeqNo: 3232958		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	110	85	115			
Barium	0.50	0.0020	0.5000	0	99.3	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.0	85	115			
Boron	0.50	0.040	0.5000	0	99.3	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.3	85	115			
Copper	0.50	0.0060	0.5000	0	99.1	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Magnesium	50	1.0	50.00	0	99.8	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Molybdenum	0.48	0.0080	0.5000	0	95.8	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Potassium	49	1.0	50.00	0	97.7	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 9 of 17

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430

09-Sep-22

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW		Batch ID: A90525		RunNo: 90525						
Prep Date:		Analysis Date: 8/23/2022		SeqNo: 3232958		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	102	85	115			
Sodium	50	1.0	50.00	0	99.0	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 10 of 17



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430  
09-Sep-22

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Dissolved Metals								
Client ID: PBW	Batch ID: A90171	RunNo: 90171								
Prep Date:	Analysis Date: 8/10/2022	SeqNo: 3215045 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								
Uranium	ND	0.00050								

Sample ID: LCS	SampType: LCS	TestCode: EPA 200.8: Dissolved Metals								
Client ID: LCSW	Batch ID: A90171	RunNo: 90171								
Prep Date:	Analysis Date: 8/10/2022	SeqNo: 3215047 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	100	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			
Thallium	0.012	0.00025	0.01250	0	97.2	85	115			
Uranium	0.012	0.00050	0.01250	0	95.6	85	115			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix interference
- B

Analyte detected in the associated Method Blank
- E

Estimated value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430  
09-Sep-22

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R90101	RunNo: 90101								
Prep Date:	Analysis Date: 8/8/2022	SeqNo: 3212192 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R90101	RunNo: 90101								
Prep Date:	Analysis Date: 8/8/2022	SeqNo: 3212193 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	90	110			
Chloride	4.6	0.50	5.000	0	92.5	90	110			
Bromide	2.4	0.10	2.500	0	96.3	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.2	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	98.6	90	110			

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R90299	RunNo: 90299								
Prep Date:	Analysis Date: 8/15/2022	SeqNo: 3220971 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R90299	RunNo: 90299								
Prep Date:	Analysis Date: 8/15/2022	SeqNo: 3220972 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.8	0.50	10.00	0	98.2	90	110			

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R90388	RunNo: 90388								
Prep Date:	Analysis Date: 8/17/2022	SeqNo: 3224861 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix interference
- B

Analyte detected in the associated Method Blank
- E

Estimated value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430

09-Sep-22

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R90388</b>		RunNo: <b>90388</b>							
Prep Date:	Analysis Date: <b>8/17/2022</b>		SeqNo: <b>3224862</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.5	90	110			

Sample ID: <b>MB</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R90416</b>		RunNo: <b>90416</b>							
Prep Date:	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226008</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R90416</b>		RunNo: <b>90416</b>							
Prep Date:	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226009</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.7	90	110			

Sample ID: <b>MB</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R90593</b>		RunNo: <b>90593</b>							
Prep Date:	Analysis Date: <b>8/25/2022</b>		SeqNo: <b>3236511</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID: <b>LCS</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R90593</b>		RunNo: <b>90593</b>							
Prep Date:	Analysis Date: <b>8/25/2022</b>		SeqNo: <b>3236512</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.9	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430

09-Sep-22

Client: Safety &amp; Environmental Solutions

Project: Lattion Pit

Sample ID: <b>100ng lcs 2</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>SL90188</b>		RunNo: <b>90188</b>							
Prep Date:	Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3216149</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.3		10.00		92.6	70	130			

Sample ID: <b>mb 2</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>PBW</b>	Batch ID: <b>SL90188</b>		RunNo: <b>90188</b>							
Prep Date:	Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3216150</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.2	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.2		10.00		92.4	70	130			

### Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430

09-Sep-22

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: <b>Ics-2 98.9uS eC</b>		SampType: <b>Ics</b>		TestCode: <b>SM2510B: Specific Conductance</b>						
Client ID: <b>LCSW</b>		Batch ID: <b>A90176</b>		RunNo: <b>90176</b>						
Prep Date:		Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3215546</b>		Units: <b>µmhos/cm</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	98.90	0	105	85	115			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430  
09-Sep-22

Client: Safety & Environmental Solutions  
Project: Lattion Pit

Sample ID: mb-1 alk	SampType: mblk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R90262	RunNo: 90262								
Prep Date:	Analysis Date: 8/12/2022	SeqNo: 3219467 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R90262	RunNo: 90262								
Prep Date:	Analysis Date: 8/12/2022	SeqNo: 3219468 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.40	20.00	80.00	0	98.0	90	110			

Sample ID: mb-2 alk	SampType: mblk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R90262	RunNo: 90262								
Prep Date:	Analysis Date: 8/12/2022	SeqNo: 3219490 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-2 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R90262	RunNo: 90262								
Prep Date:	Analysis Date: 8/12/2022	SeqNo: 3219491 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.36	20.00	80.00	0	98.0	90	110			

Sample ID: mb-3 alk	SampType: mblk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R90262	RunNo: 90262								
Prep Date:	Analysis Date: 8/12/2022	SeqNo: 3219513 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-3 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R90262	RunNo: 90262								
Prep Date:	Analysis Date: 8/12/2022	SeqNo: 3219514 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.56	20.00	80.00	0	97.0	90	110			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix interference
- B

Analyte detected in the associated Method Blank
- E

Estimated value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208430

09-Sep-22

Client: Safety & Environmental Solutions

Project: Lattion Pit

Sample ID: MB-69419	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 69419	RunNo: 90245								
Prep Date: 8/11/2022	Analysis Date: 8/12/2022	SeqNo: 3218387 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-69419	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 69419	RunNo: 90245								
Prep Date: 8/11/2022	Analysis Date: 8/12/2022	SeqNo: 3218388 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

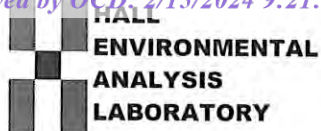
E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 17 of 17



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Safety & Environmental Solutions

Work Order Number: 2208430

RcptNo: 1

Received By: Tracy Casarrubias 8/6/2022 10:30:00 AM

Completed By: Tracy Casarrubias 8/6/2022 3:19:49 PM

Reviewed By: KPN 8.08.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

8

(<2 or >12 unless noted)

Adjusted?

N/A

Checked by:

YK 8/8/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			
2	1.0	Good	Yes			

necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 314653

CONDITIONS

Operator: EOG RESOURCES INC 5509 Champions Drive Midland, TX 79706	OGRID:
	7377
	Action Number: 314653
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Site Chronology and Status Update for the Lattion Pit has been received and accepted for the record. App ID: 314653	9/20/2024