3R-1061

Williams Four Corners LLC

Lateral L-2
Subsequent C-141
06/25/2018

58

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: **Williams Four Corners LLC**	Contact: **Kijun Hong**
Address: **1755 Arroyo Dr., Farmington, NM 87413**	Telephone No.: **(505) 632-4475**
Facility Name: **Lateral L-2**	Facility Type: **Pipeline**

Surface Owner: **BLM**	Mineral Owner	BLM Project No. **NMNM0013315**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	14	28N	10W					San Juan

Latitude 36.6602 **Longitude** -107.8595

NATURE OF RELEASE

Type of Release: **Natural Gas**	Volume of Release: **144 MCF**	Volume Recovered: **0 MCF**
Source of Release: **Pipeline**	Date and Hour of Occurrence: **07/20/2017 at 4:00 PM**	Date and Hour of Discovery: **07/20/2017 at 4:00 PM**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? **NA**	
By Whom? **NA**	Date and Hour: **NA**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **NA**	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
Line leak discovered by survey crew. Leak has been repaired.

This is a subsequent report. Please see the attached groundwater monitoring report.

Describe Area Affected and Cleanup Action Taken.*
This is a subsequent report. Please see the attached groundwater monitoring report.

NMOCD
JUN 06 2018
DISTRICT III

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Aaron Galer	OIL CONSERVATION DIVISION Approved by Environmental Specialist:
Printed Name: **Aaron Galer**	
Title: **Environmental Specialist**	Approval Date: 6/25/18 Expiration Date:
E-mail Address: **aaron.galer@williams.com**	Conditions of Approval: Attached ☒
Date: **06/1/2018** Phone: **(801) 584-6746**	

* Attach Additional Sheets If Necessary

Update From Operator
NVF1724832528

Fields, Vanessa, EMNRD

From: Galer, Aaron <Aaron.Galer@Williams.com>
Sent: Monday, June 25, 2018 9:26 AM
To: Fields, Vanessa, EMNRD
Subject: Project Updates

Vanessa,

Per our phone conversation this morning, here are the project updates:

1) Lowery Tank Battery: An application was submitted on 6/18/18 to the NMSLO for the three additional proposed monitoring wells. Approval is expected within the next 2 to 3 weeks.

2) Lateral L-2: A casual use request will be submitted to the BLM today for the additional proposed groundwater monitoring outside the pipeline right-of-way. Approval is expected within the next 4 to 6 weeks.

3) Hargrave: An application was submitted on 3/9/18 to the BLM for the installation of three additional proposed monitoring wells outside the pipeline right-of-way. Approval is expected within the next 2 to 3 weeks.

Let me know if you have any additional questions. Otherwise, I'll keep you updated when progress is made.

Aaron Galer | Williams | Environmental Specialist IV | Environmental Programs
Office: 801-584-6746 | Cell: 801-244-1219 | 295 Chipeta Way, SLC, UT 84108

LT Environmental, Inc.
848 East 2nd Avenue
Durango, Colorado 81301
970.385.1096

May 31, 2018

Ms. Vanessa Fields
Environmental Specialist
New Mexico Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Groundwater Monitoring Results
Williams Four Corners LLC
Lateral L-2 Pipeline Release
3RP-1061
San Juan County, New Mexico

Dear Ms. Fields:

LT Environmental, Inc. (LTE), on behalf of Williams Four Corners LLC (Williams) presents the following letter report to the New Mexico Oil Conservation Division (NMOCD) detailing groundwater sampling activities near the Lateral L-2 pipeline release (Site) that occurred immediately west of the Armenta Wash in the northeast quarter of the southeast quarter of Section 14 in Township 28 North, Range 10 West in San Juan County, New Mexico (Figure 1). The purpose of the investigation was to evaluate and delineate residual groundwater impacts following a pipeline release reported to the NMOCD on July 20, 2017.

Background

On June 20, 2017, a pipeline leak was detected during a leak survey on the Lateral L-2 leg adjacent to the Armenta Wash. The pipeline was immediately shut-in and repaired. The soil surrounding the leak area was suspected of petroleum hydrocarbon impacts due to its dark color and organic odor, but analytical results from initial soil sampling indicated no presence of benzene, toluene, ethylbenzene, and total xylenes (BTEX) or total petroleum hydrocarbons (TPH). The dark color and organic odor were likely a result of the rich organic material decomposing in the shallow saturated soil on the banks of the Armenta Wash. As shallow groundwater was observed during the pipeline repair, the NMOCD requested a groundwater sample be collected. Prior to backfilling the excavated area around the repaired pipeline, a section of slotted 2-inch diameter polyvinyl chloride (PVC) pipe was installed using a backhoe into the native saturated soil at approximately 7 feet below ground surface (bgs), beneath the depth of the pipeline repair, as a temporary groundwater collection point. The native soil surrounding the temporary monitoring well consisted of a fine, silty sand that allows for groundwater infiltration into the slotted PVC pipe.

On October 20, 2017, LTE personnel were on site to collect a grab groundwater sample in the presence of NMOCD personnel. Laboratory analytical results indicated that groundwater samples

had a concentration of 39 micrograms per liter (µg/L) of benzene and 4.3 µg/L of toluene. No ethylbenzene or xylenes were detected. Due to the benzene concentration, which exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard, the NMOCD requested that Williams conduct additional groundwater sampling to laterally define the extent of impacts to groundwater. Williams proposed that additional temporary groundwater monitoring wells be installed within the existing pipeline right-of-way prior to requesting additional surface access from the Bureau of Land Management (BLM) in an effort to expedite the groundwater delineation events.

On January 31, 2018, LTE personnel were on site to conduct a subsurface soil investigation via hand auger and to install four temporary monitoring wells into the exploratory boreholes for further groundwater investigation. Similar dark, organic material was encountered in the soil vadose zone and samples collected from this material were field screened with a photo-ionization detector (PID). No field screening results exceeded 100 parts per million (ppm); therefore, no soil samples were submitted for laboratory analysis. The open boreholes were completed as temporary groundwater monitoring points by clearing any remaining soil cuttings and hand augering as deep into the groundwater table as possible before the saturated sidewalls composed of sand collapsed. A 1-inch diameter slotted PVC pipe with a silica sand pre-pack filter around the screened interval was installed in the open borehole. The annulus between the riser and borehole was backfilled with native material. Soil boring and monitoring well installation/completion boring logs are included as Attachment 1.

On February 7, 2018, LTE personnel were on site to develop and purge the four new temporary monitoring wells prior to sampling. Depth to groundwater was measured in each well and a purge volume of ten well casings was calculated. Purge water was collected using a peristaltic pump and dedicated tubing until ten well casing volumes were removed or the well ran dry. Purge water was collected and disposed of at a nearby Williams gathering facility.

On March 8, 2018, LTE personnel were on site to sample groundwater from each monitoring well. Laboratory analytical results indicated concentrations of 18 µg/L of benzene in monitoring well MW-1 and 210 µg/L of benzene in monitoring well MW-5. No other analytes or monitoring wells exceeded the NMWQCC standard. Due to the benzene concentration, which exceeded the NMWQCC standard, the NMOCD requested that Williams conduct additional monitoring well installation and groundwater sampling to laterally define the extent of impacts to groundwater. Williams proposed additional temporary monitoring wells be installed within the existing pipeline right-of-way

On April 24, 2018, LTE personnel were on site to conduct a subsurface soil investigation via hand auger and to install two additional temporary monitoring wells into exploratory boreholes for further groundwater investigation. Light brown sand and lean clay were encountered in the soil vadose zone and samples collected from this material were screened with a PID. No field screening results exceeded 100 ppm, therefore no soil samples were submitted for laboratory analysis. The

open boreholes were completed as temporary groundwater monitoring points in the same manner as previously described. Soil boring and temporary monitoring well installation completion boring logs are included as Attachment 1.

Groundwater Sampling

Following installation of temporary groundwater monitoring wells, each new well was developed using a PVC bailer. On April 24, 2018, LTE personnel purged groundwater until the pH, electrical conductivity (EC), and temperature were stabilized and turbidity was reduced to the greatest extent possible. Water quality parameters were measured using an YSI-556 Handheld Multi-Probe water quality field meter.

On April 27, 2018, LTE personnel sampled temporary groundwater monitoring wells MW-1 through MW-7. Prior to collecting samples, depth to groundwater and the total depth of temporary monitoring wells were measured using an oil/water interface probe. Depth to water and the total depth of the monitoring wells were used to calculate the required volume of water to be purged from each monitoring well (minimum of three well casing volumes). Once the initial parameters were collected and the purge volumes were determined, groundwater from each temporary monitoring well was removed using a peristaltic groundwater pump and dedicated disposable tubing. The interface probe and water quality meter were decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each use. The disposable peristaltic tubing was discarded after sampling each temporary monitoring well.

As groundwater was purged from the temporary monitoring wells, pH, EC, and temperature were monitored. The temporary monitoring wells were purged until pH, EC, and temperature stabilized, indicating the purge water was representative of aquifer conditions. Stabilization was defined as three consecutive stable readings for each water parameter (plus or minus (±) 0.4 units for pH, ±10 percent for EC, and ±2 degrees (°) Celsius for temperature). Alternatively, lower producing wells were purged until the wells were purged dry, then allowed to recover for immediate sampling. Field observations were documented on Water Sample Collection Forms included as Attachment 2. All purge water was disposed of at a Williams gathering facility.

Per the Conditions of Approval from the NMOCD received on January 8, 2018, a blind field duplicate was submitted for analysis. For the sampling event on April 27, 2018, temporary groundwater monitoring well MW-5 was selected and a duplicate sample identified as MW-A was collected for comparative laboratory analysis. A subsequent email from Mr. Randy Bayliss with the NMOCD requested that the full list of volatile organic compounds be analyzed by United States Environmental Protection Agency (EPA) Method 8260B.

After each monitoring well was properly purged, groundwater samples were collected in the appropriate sample bottles. The samples were labeled with the date and time of sample collection, well designation, project name, collector's name, and parameters to be analyzed. The samples were immediately sealed and stored on ice and transferred to Hall Environmental Analysis Laboratory

(HEAL) for analysis of the full list of volatile organic compounds using EPA Method 8260B. Samples were maintained under strict chain-of-custody (COC) protocol documenting the date and time of sample collection, time and date of sample transfer, sample designation, type of sample, sampler's name, preservative used, requested analyses, and signatures of the sampler, courier, and the laboratory personnel documenting the custody transfer.

Results

Depth to groundwater measured during the sampling event is included in Table 1. No free product was detected with the oil-water interface probe. Laboratory analytical results indicated BTEX concentrations in temporary monitoring wells MW-3, MW-4, MW-6, and MW-7 were below laboratory detection limits or compliant with the NMWQCC groundwater standards. The benzene concentration in temporary monitoring wells MW-1, MW-2, and MW-5 exceeded the NMWQCC standard of 10 µg/L with concentrations of 200 µg/L, 170 µg/L, and 190 µg/L, respectively. Sample MW-A had a concentration of 200 µg/L as a blind field duplicate for monitoring well MW-5, which is within 5 percent error. The analytical results are illustrated on Figure 2 and summarized in Table 2; the complete laboratory analytical report is included as Attachment 3.

Conclusions

As groundwater in temporary monitoring wells MW-1 (release point), MW-2, and MW-5 (downgradient) exhibit benzene concentrations exceeding the NMWQCC standard of 10 µg/L, Williams proposes utilizing a Hydropunch™ in-situ groundwater sampling tool to collect grab samples in four locations outside of the existing pipeline right-of-way access to further delineate impacts to groundwater. A letter describing the in-situ groundwater sampling will be provided by Williams to the BLM to seek approval and designate the temporary groundwater sampling as "casual use." If impacts are observed outside of the existing pipeline right-of-way, further surface access will be requested from the BLM, and additional temporary groundwater monitoring wells will be installed. If results from the in-situ groundwater sampling event are compliant with NMWQCC standards, Williams will evaluate remediation options to address the impacts to groundwater within the existing pipeline right-of-way access.

If you have any questions, please contact me at dburns@ltenv.com or Aaron Galer at Aaron.Galer@Williams.com.

Sincerely,

LT ENVIRONMENTAL, INC.

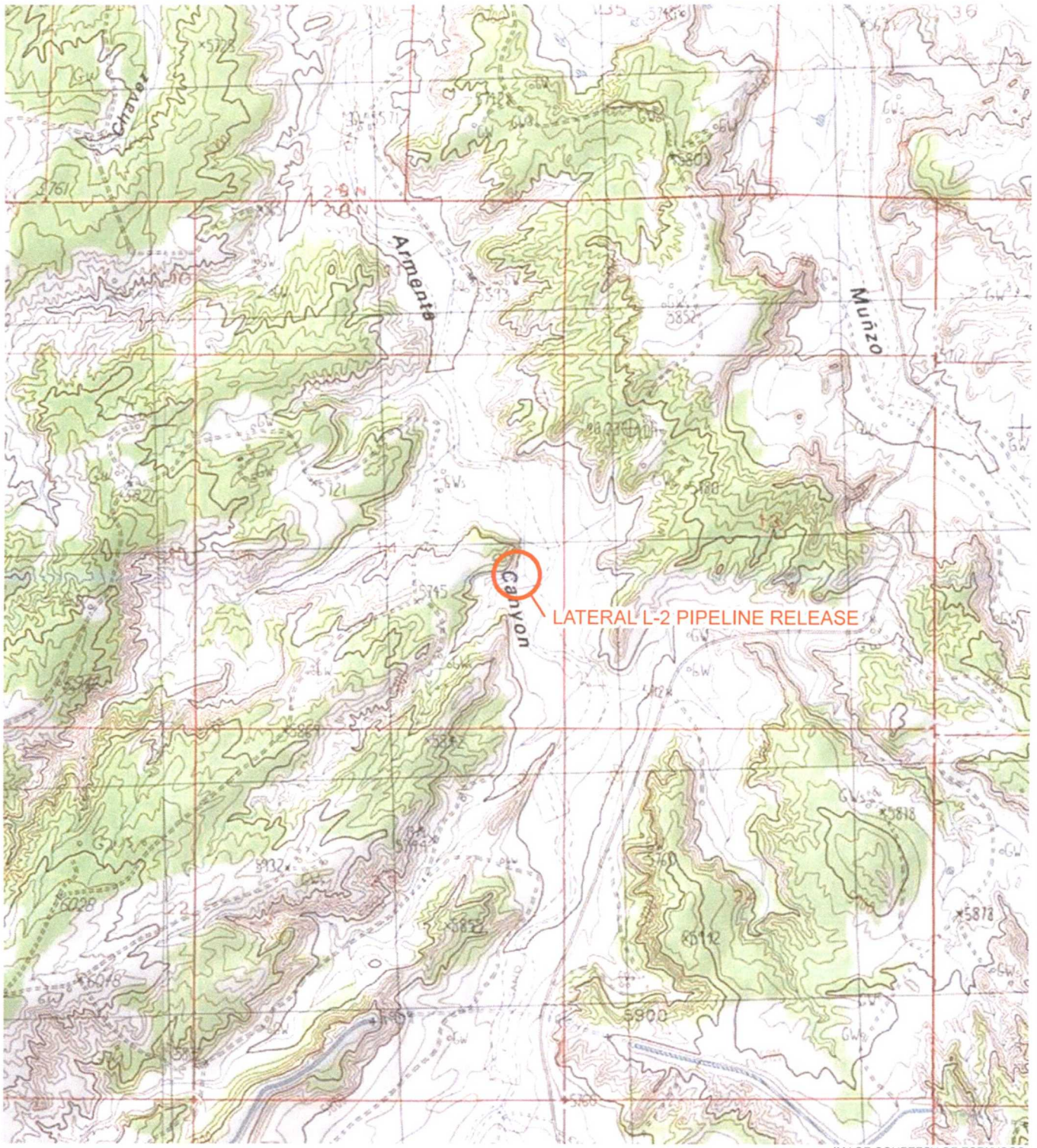
Daniel Burns
Project Geologist

Ashley L. Ager, M.S., P.G.
Senior Geologist

cc: Aaron Galer, Williams Four Corners LLC

Attachments
Figure 1 – Site Location Map
Figure 2 – Groundwater Analytical Results
Table 1 –Groundwater Elevation Summary
Table 2 – Groundwater Analytical Results
Attachment 1 – Boring Log/Monitoring Well Completion Diagrams
Attachment 2 – Water Sample Collection Forms
Attachment 3 – Laboratory Analytical Report

FIGURES



LEGEND

SITE LOCATION

0 2,000 4,000

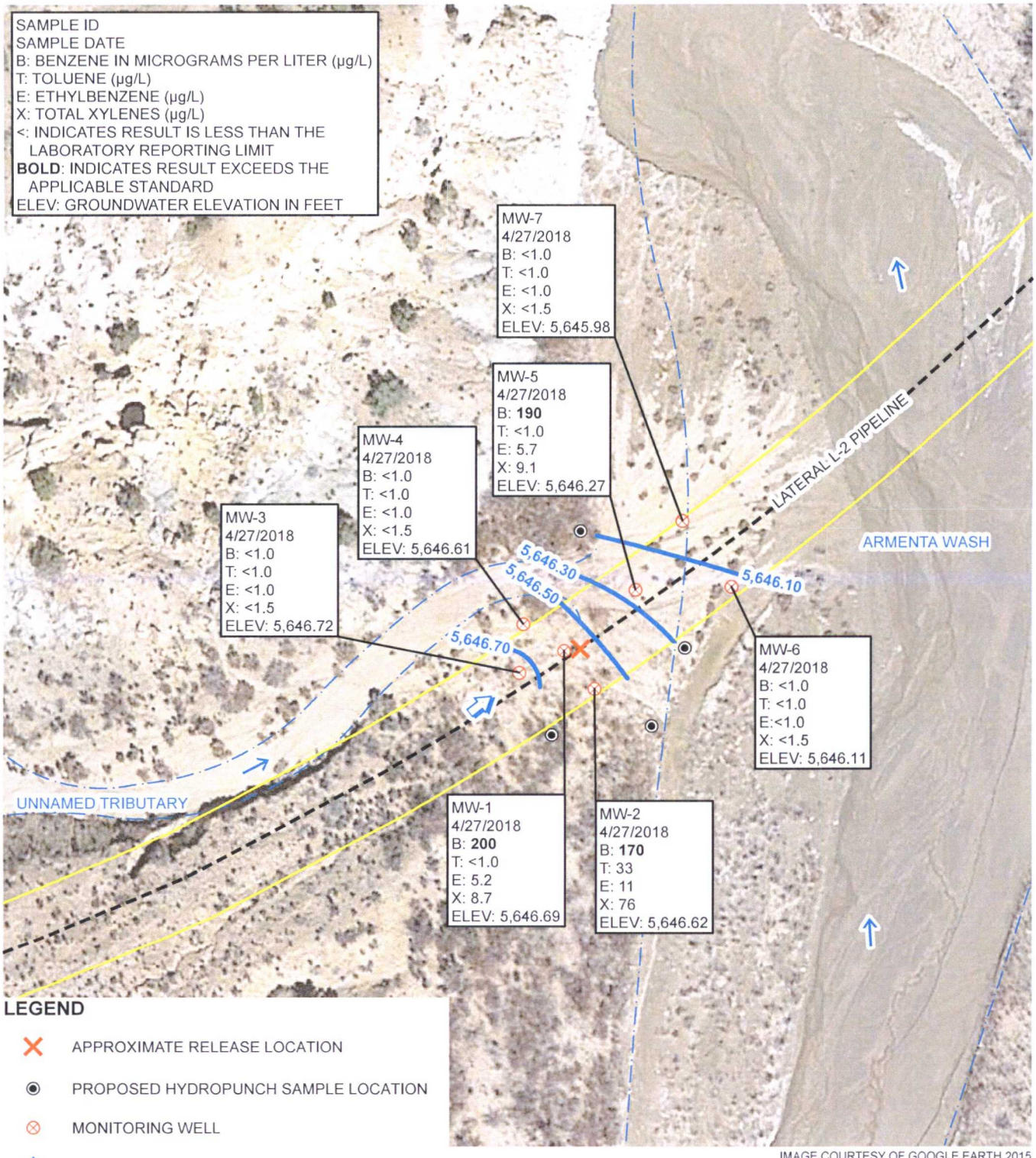
Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
LATERAL L-2 PIPELINE RELEASE
NESE SEC 14 T28N R10W
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

P:\Williams Four Corners\GIS\MXD\034017003_LATERAL L-2\034017003_LATERAL L-2_FIG01_SL.mxd



LEGEND

- APPROXIMATE RELEASE LOCATION
- PROPOSED HYDROPUNCH SAMPLE LOCATION
- MONITORING WELL
- SURFACE WATER FLOW DIRECTION
- GROUNDWATER FLOW DIRECTION
- PIPELINE
- ARMENTA WASH BOUNDARY
- RELATIVE GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 0.20 FEET
- 25-FOOT PIPELINE RIGHT-OF-WAY BUFFER

IMAGE COURTESY OF GOOGLE EARTH 2015

0 60 120
Feet

N

FIGURE 2
GROUNDWATER ANALYTICAL RESULTS
LATERAL L-2 PIPELINE RELEASE
NESE SEC 14 T28N R10W
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

LTE

P:\Williams Four Corners\GIS\MXD\034017003_LATERAL L-2\034017003_LATERAL L-2_FIG02_GWA_GWE_APR_2018_180531.mxd

TABLE 1
GROUNDWATER ELEVATION SUMMARY

LATERAL L-2 PIPELINE RELEASE
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

Well Name	Date	Top of Casing Elevation (feet)	Total Depth (feet BTOC)	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet)
MW-1	10/20/2017	5,653.32	9.08	7.10	5646.22
	1/31/2018			6.65	5646.67
	3/8/2018		9.05	6.60	5646.72
	4/27/2018		9.05	6.63	5646.69
MW-2	1/31/2017	5,654.53	10.18	7.00	5647.53
	3/8/2018			7.00	5647.53
	4/27/2018		10.19	7.91	5646.62
MW-3	3/8/2018	5,653.81	10.18	7.71	5646.10
	4/27/2018		10.19	7.09	5646.72
MW-4	3/8/2018	5,654.42	10.15	7.58	5646.84
	4/27/2018		10.18	7.81	5646.61
MW-5	3/8/2018	5,654.02	10.15	7.70	5646.32
	4/27/2018		10.17	7.75	5646.27
MW-6	4/27/2018	5,653.53	10.18	7.42	5646.11
MW-7	4/27/2018	5,653.37	10.17	7.39	5645.98

Notes:
BTOC - below top of casing

TABLE 2
GROUNDWATER ANALYTICAL RESULTS

LATERAL L-2 PIPELINE RELEASE
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

Analyte	NMWQCC Standard	Unit	MW - 1 10/20/2017	MW - 1 3/8/2018	MW - 1 4/27/2018	MW - 2 3/8/2018	MW - 2 4/27/2018	MW - 3 3/8/2018	MW - 3 4/27/2018	MW - 4 3/8/2018	MW - 4 4/27/2018	MW -5 3/8/2018	MW - 5 4/27/2018	MW - A 3/8/2018	MW - A 4/27/2018	MW - 6 4/27/2018	MW - 7 4/27/2018
USEPA Method 8260B - Volatile Organic Compounds																	
benzene	10	µg/L	39	18	200	<1.0	170	<1.0	<1.0	1.6	<1.0	210	190	210	200	<1.0	<1.0
toluene	750	µg/L	4.3	<1.0	<1.0	<1.0	33	<1.0	<1.0	<1.0	<1.0	110	<1.0	120	<1.0	<1.0	<1.0
ethylbenzene	750	µg/L	<2.5	<1.0	5.2	<1.0	11	<1.0	<1.0	<1.0	<1.0	2.7	5.7	3.7	6.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2,4-trimethylbenzene	620	µg/L	NA	NA	2.2	NA	3.7	NA	<1.0	NA	<1.0	NA	1.5	NA	1.6	<1.0	<1.0
1,3,5-trimethylbenzene	NE	µg/L	NA	NA	2.1	NA	3.0	NA	<1.0	NA	<1.0	NA	1.6	NA	1.7	<1.0	<1.0
1,2-dichloroethane (EDC)	10	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2-dibromoethane (EDB)	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
naphthalene	NE	µg/L	NA	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	<2.0	<2.0
1-methylnaphthalene	NE	µg/L	NA	NA	<4.0	NA	<4.0	NA	<4.0	NA	<4.0	NA	<4.0	NA	<4.0	<4.0	<4.0
2-methylnaphthalene	NE	µg/L	NA	NA	<4.0	NA	<4.0	NA	<4.0	NA	<4.0	NA	<4.0	NA	<4.0	<4.0	<4.0
acetone	NE	µg/L	NA	NA	15	NA	36	NA	<10	NA	<10	NA	20	NA	25	<10	<10
bromobenzene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
bromodichloromethane	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
bromoform	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
bromomethane	NE	µg/L	NA	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	<3.0	<3.0
2-butanone	NE	µg/L	NA	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10
carbon disulfide	NE	µg/L	NA	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10
carbon tetrachloride	10	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
chlorobenzene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
chloroethane	NE	µg/L	NA	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	<2.0	<2.0
chloroform	100	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
chloromethane	NE	µg/L	NA	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	<3.0	<3.0
2-chlorotoluene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
4-chlorotoluene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
cis-1,2-DCE	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
cis-1,3-dichloropropene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2-dibromo-3-chloropropane	NE	µg/L	NA	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	<2.0	<2.0
dibromochloromethane	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
dibromomethane	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2-dichlorobenzene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,3-dichlorobenzene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,4-dichlorobenzene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
dichlorodifluoromethane	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,1-dichloroethane	25	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,1-dichloroethene	5	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2-dichloropropane	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,3-dichloropropane	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
2,2-dichloropropane	NE	µg/L	NA	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	<2.0	<2.0
1,1-dichloropropene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
hexachlorobutadiene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
2-hexanone	NE	µg/L	NA	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10
isopropylbenzene	NE	µg/L	NA	NA	<1.0	NA	1.3	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
4-isopropytoluene	NE	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0

4-methyl-2-pentanone	**NE**	µg/L	NA	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10
methylene chloride	**100**	µg/L	NA	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	<3.0	<3.0
n-butylbenzene	**NE**	µg/L	NA	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	NA	<3.0	<3.0	<3.0
n-propylbenzene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
sec-butylbenzene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
styrene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
tert-butylbenzene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,1,1,2-tetrachloroethane	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,1,2,2-tetrachloroethane	**10**	µg/L	NA	NA	<1.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	<2.0	<2.0
tetrachloroethene (PCE)	**20**	µg/L	NA	NA	<2.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
trans-1,2-DCE	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
trans-1,3-dichloropropene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2,3-trichlorobenzene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2,4-trichlorobenzene	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,1,1-trichloroethane	**60**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,1,2-trichloroethane	**10**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
trichloroethene (TCE)	**100**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
trichlorofluoromethane	**NE**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
1,2,3-trichloropropane	**NE**	µg/L	NA	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	NA	<2.0	<2.0	<2.0
vinyl chloride	**1**	µg/L	NA	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0
xylenes, total	**620**	µg/L	<5.0	<1.5	8.7	<1.5	76	<1.5	<1.5	5.4	<1.5	70	9.1	69	9.4	<1.5	<1.5

Notes:

µg/L - micrograms per liter

NMWQCC - New Mexico Water Quality Control Commission

NA - Not analyzed

NE - Not established

USEPA - United States Environmental Protection Agency

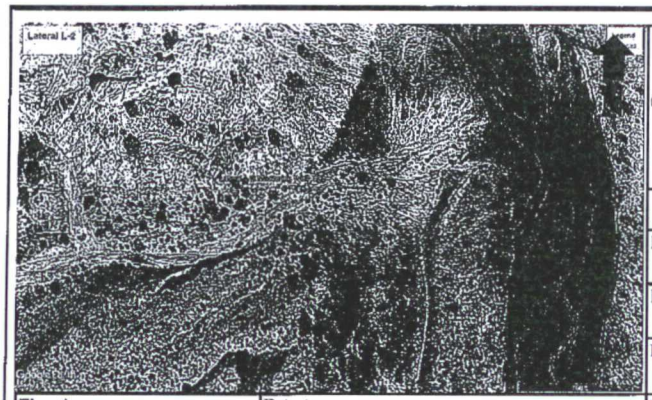
Bold - Indicates concentration exceeds the applicable NMWQCC standard

< - Indicates result is below laboratory reporting limit

"MW - A" used as blind field duplicate for monitoring well MW - 5

ATTACHMENT 1

BORING LOGS/WELL COMPLETION DIAGRAMS



Advancing Opportunity

848 E. 2nd Ave
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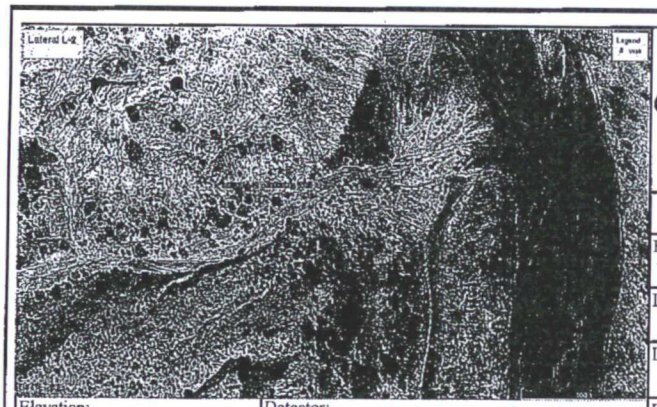
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1	Project: Lateral L-2
Date: 10-3-17	Project Number: 034018012
Logged By: Danny Burns	Drilled By: Danny Burns
Elevation:	Detector: PID
Drilling Method: Excavation	Sampling Method: NA
Gravel Pack: ~~10-20 Silica Sand~~ Native backfill, silty sand	Seal: NA
	Grout: NA
Casing Type: Schedule 40 PVC	Diameter: 2" Length: 5'
	Hole Diameter: NA
	Depth to Liquid:
Screen Type: Schedule 40 PVC	Slot: 0.010"
	Diameter: 2" Length: 5'
	Total Depth: 7'
	Depth to Water: 6'

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks
	moist	NA	NO		0–5				Backfill med grain sand lt. brown moist loose no stain/odor
	wet	NA	NO		5–7				med sand black loose w/organic material, Organic odor
									TD ≈ 7'
									Well casing placed in excavation clean sand backfilled excavation around well

Well Completion: 2" PVC well stick up; native material backfill, silty sand



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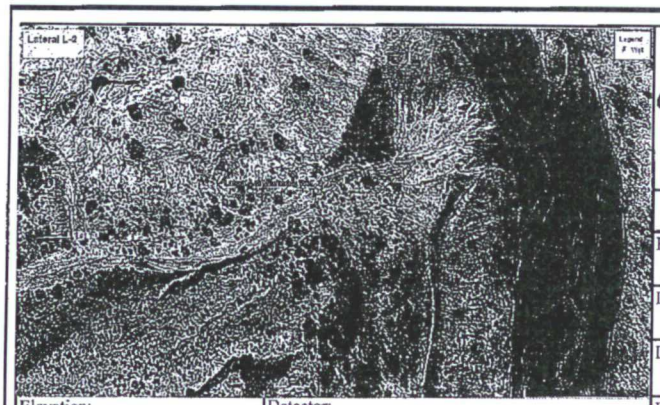
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-2	Project: Lateral L-2
Date: 1/31/2018	Project Number: 034018012
Logged By: E. Carroll	Drilled By: LTE
Elevation: 5660'	Detector: PID
Drilling Method: Hand Auger	Sampling Method: NA
Gravel Pack: ~~10-20 Silica Sand~~ 20x40 Silica Sand Pre-Pack	Seal: NA
Grout: NA	
Casing Type: Schedule 40 PVC	Diameter: 1" Length:
Hole Diameter: 4"	Depth to Liquid: NA
Screen Type: Schedule 40 PVC	Slot: 0.010" Diameter: 1" Length:
Total Depth: ~7.5'	Depth to Water: 6'

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	moist	62.1	No	—	0	—	—		Backfill med grain sand, lt. brown moist, loose no stain/odor	
					1					
					2				SAA w/ white sandstone cobbles	
					3					
	moist	63.0	ND	—	4				Black sand w/organic matter loose moist. slight organic odor no stain	
					5					
	~~moist~~ wet	3.7	ND	—	6				SAA above	
					7				↓ Increasing H_2O Saturation	
	wet	0.6	ND	—	8					
					9					
					10				TD ≈ 7.5'	
					11					
					12				DTW ≈ 6'	
					13					
					14					
					15					

Slot
Sand Pack
Back Fill



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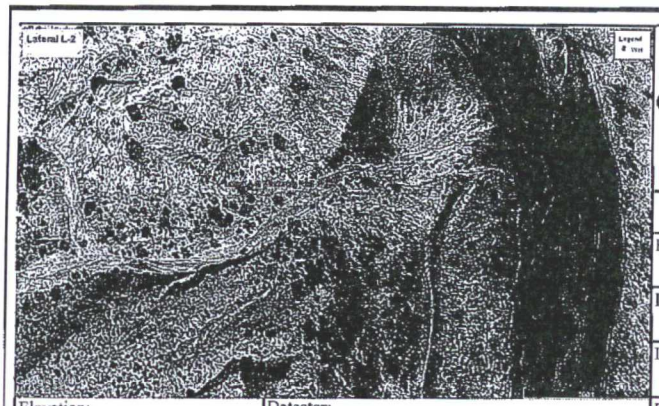
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-3	Project: Lateral L-2
Date: 1/31/2018	Project Number: 034018012
Logged By: E. Carroll	Drilled By: LTE
Elevation: 5660'	Detector: PID
Drilling Method: Hand Auger	Sampling Method: NA
Gravel Pack: ~~10-20 Silica Sand~~ 30x40 Silica Sand Pre-Pack	Seal: NA
Grout: NA	
Casing Type: Schedule 40 PVC	Diameter: 1" Length: 5'
Hole Diameter: 4"	Depth to Liquid: NA
Screen Type: Schedule 40 PVC	Slot: 0.010" Diameter: 1" Length: 5'
Total Depth: 8'	Depth to Water: 5'

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	moist	1.1	NO	NA	0	NA			loose lt. brown med grain sand	
					1				NO Stain/Odor	
	moist	1.0	NO	NA	2	NA			SAA	
					3					
	moist	0.8	NO	NA	4	NA			SAA	
					5					
	wet	0.6	NO	NA	6	NA			loose lt brown med grain sand	
					7				w/ lt grey mottles H_2O saturated	
	wet	0.6	NO	NA	8	NA			SAA	
					9					
					10				TD ≈ 8'	
					11				DTW ≈ 5'	
					12					
					13					
					14					
					15					



LTE Advancing Opportunity

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Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-4	Project: Lateral L-2
Date: 1/31/2018	Project Number: 034018012
Logged By: E. Carroll	Drilled By: LTE
Elevation: 5660' / Detector: PID	Drilling Method: Hand Auger / Sampling Method: NA
Gravel Pack: ~~10-20 Silica Sand~~ 30x40 Silica Sand Pre-Pack	Seal: NA / Grout: NA
Casing Type: Schedule 40 PVC	Diameter: 1" / Length: 5' / Hole Diameter: 4' / Depth to Liquid: NA
Screen Type: Schedule 40 PVC / Slot: 0.010"	Diameter: 1" / Length: 5' / Total Depth: 8.5' / Depth to Water: 6'

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	moist	1.8	NO		0				loose, lt. brown med grain sand moist no stain/odor	
	moist	2.1	NO		1					
	moist	2.2	NO		2				SAA	
					3					
	wet	1.1	NO		4				SAA	
					5					
	wet	1.2	NO		6				loose lt. grey coarse sand H_2O saturated No Stain/odor	
					7					
					8					
					9					
					10				TD ≈ 8.5'	
					11					
					12				DTW ≈ 6'	
					13					
					14					
					15					

LTE Advancing Opportunity

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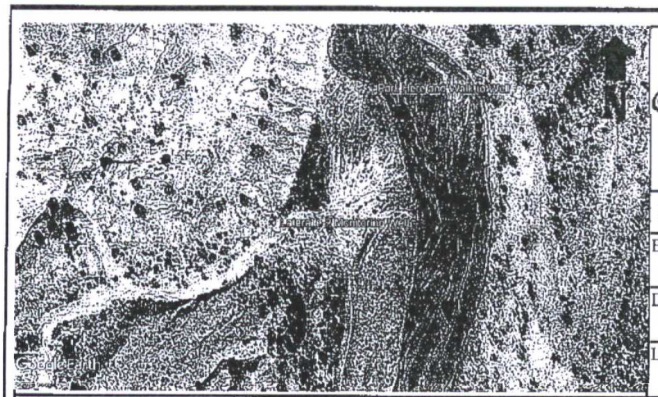
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-#5	Project: Lateral L-2
Date: 1/31/2018	Project Number: 034018012
Logged By: E. Carroll	Drilled By: LTE
Elevation: 5660' / Detector: PID	Drilling Method: Hand Auger / Sampling Method: NA
Gravel Pack: ~~10-20 Silica Sand~~ 20 x 40 Silica sand pre-pack	Seal: NA / Grout: NA
Casing Type: Schedule 40 PVC / Diameter: 1" / Length: 5'	Hole Diameter: 4" / Depth to Liquid: NA
Screen Type: Schedule 40 PVC / Slot: 0.010" / Diameter: 1" / Length: 5'	Total Depth: 7.5' / Depth to Water: 4.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	moist	13.5	No	NA	0–1	NA			loose lt brown med sand moist No Stain	
	moist	10.6	NO	NA	4	NA			SAA	
	wet	1.8	NO	NA	7	NA			loose lt grey coarse sand H_2O saturated No Stain	
									TD ≈ 7.5'	
									DTW ≈ 4.5'	



Advancing Opportunity

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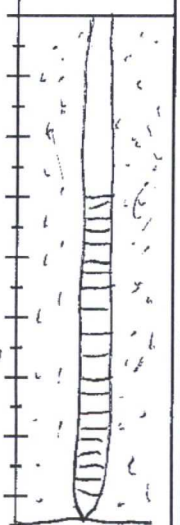
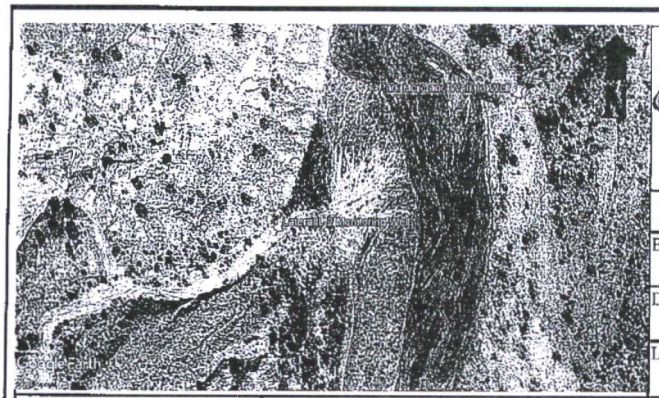
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-6	Project: Lateral L-2
Date: ~~MW-6~~ 4/24/18	Project Number: 034018012
Logged By: Danny Burns	Drilled By: Enviro Drill
Elevation:	Detector: PID
Drilling Method: Hand auger ~~Hollow Stem~~	Sampling Method: Hand Auger ~~Split Spoon~~
Gravel Pack: 10-20 Silica Sand	Seal: NA
Grout: NA	
Casing Type: Schedule 40 PVC	Diameter: 2" Length: 5'
Hole Diameter:	Depth to Liquid: NA
Screen Type: Schedule 40 PVC	Slot: 0.010"
Diameter: 2" Length: 5'	Total Depth: 8'
Depth to Water: ~5'	

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks
	Dry	0.0	NO		0			SP	Loose, dry, lt. brown, med-coarse sand
					1				
	moist	0.0	NO		2			SP	Loose, moist, lt. brown, med-coarse sand
					3				
	wet	0.0	NO		4			SP	SAA
					5				
	wet	1.4	NO		6			SC	Loose, saturated, grey, coarse sand some clay < 30%
					7				
	wet	58.0	NO		8			SC	SAA
					9				
					10				Refusal @ 8'
					11				
					12				
					13				
					14				
					15				

Well Completion





Advancing Opportunity

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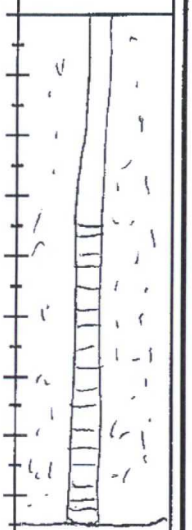
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-7	Project: Lateral L-2
Date: 4/24/18	Project Number: 034018012
Logged By: Eric Carroll ~~Danny Burns~~	Drilled By: Enviro Drill
Elevation:	Detector: PID
Drilling Method: Hollow Stem	Sampling Method: Split Spoon
Gravel Pack: 10-20 Silica Sand	Seal: NA
Grout: NA	
Casing Type: Schedule 40 PVC	Diameter: 2" Length: 5'
Hole Diameter:	Depth to Liquid:
Screen Type: Schedule 40 PVC	Slot: 0.010"
Diameter: 2" Length: 5'	Total Depth:
Depth to Water:	

Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks
	Dry	0.0	NO		0			SP	loose, lt. brown, med-coarse sand
					1				
	moist	3.0	NO		2			SP	loose, moist, lt. brown, med-coarse sand
					3				
	wet	3.2	NO		4			SP	SAA
					5				
	wet	656.0	NO		6			SC	loose, saturated, grey, Sand some clay >15%
					7				
	wet	0.1	NO		8			CL	compact, saturated, grey, sandy lean clay >30% sand
					9				
					10				
					11				
					12				
					13				
					14				
					15				

Well Completion



ATTACHMENT 2

WATER SAMPLE COLLECTION FORMS

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1500	LTE Project#	034018012
Sample ID	MW-1	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	6.63	TD of Well	9.05
Time	1430	Depth to Product	NA
(3) Well Casing Volume		low flow	

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	DO	Comments	ORP
1445 1440			7.89	22.77	4.47	0.70		-135.1
1442			7.58	19.25	4.67	0.48		-144.4
1444			7.45	21.27	5.23	0.38		-160.0
1446			7.37	20.58	5.77	0.44		-170.0
1448			7.28	20.53	4.72	0.58		-172.5
1450			7.29	20.34	4.98	0.75		-175.3
1452			7.29	20.45	4.84	0.98		-177.7
1454			7.27	20.38	4.74	1.01		-179.7
1456			7.28	20.35	4.77	1.03		-181.7

DO:	
ORP:	

Comments:

Describe Deviations from SOP:

Signature: John Adams **Date:** Friday, April 27, 2018

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1130	LTE Project#	034018012
Sample ID	MW-2	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	7.91	TD of Well	10.19
Time	1050	Depth to Product	NA
(3) Well Casing Volume		Low flow	

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	DO mg/L Comments	ORP mV
1110	0.1	0.1	20.66 ~~18.03~~		10.01	0.02mg/L	~~0.03mg/L~~ -198.4
1112	0.05	0.15	~~20.80~~	20.03	9.02	0.02mg/L	-196.2mV
1115			8.01	20.04	10.24	0.02	-197.8
1118			8.01	19.85	9.59	0.01	-205.4
1120			8.00	19.96	10.29	0.00	-211.7
1122			8.00	19.90	10.65	0.00	-217.0
1124			8.01	19.86	10.32	0.00	-219.0
1126			8.00	19.90	10.31	0.00	-221.2
1128			8.00	19.95	10.29	0.00	-221.9
1130			8.00	19.94	10.27	0.00	-223.4

DO:	
ORP:	

Comments:

Describe Deviations from SOP:

Signature: John Adams **Date:** Friday, April 27, 2018

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1350	LTE Project#	034018012
Sample ID	MW-3	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	7.09	TD of Well	10.19
Time	1330	Depth to Product	NA
(3) Well Casing Volume			Low-flow

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	DO	Comments: Clear ORP
1333			8.32	21.91	7.17	4.99 mg/L	-121.4
1335			7.93	22.92	8.61	5.88	-126.2
1337			7.86	22.38	6.12	6.22	-127.1
1339			7.84	22.83	6.30	6.33	-131.3
~~1339~~ 1341			7.84	22.90	6.69	6.29	-131.9
1343			7.85	22.85	6.34	6.48	-129.2
1345			7.85	22.90	6.44	6.21	-129.1

DO:	
ORP:	

Comments:

Describe Deviations from SOP:

Signature: Josh Adams **Date:** Friday, April 27, 2018

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1425	LTE Project#	034018012
Sample ID	MW-4	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	7.81	TD of Well	~~18~~ 10.~~00~~18
Time	1400	Depth to Product	NA
(3) Well Casing Volume		low-flow	

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	DO (mg/L)	comments	ORP mV
1403			8.20	21.60	7.83	4.51		-43.4
1405			8.03	21.91	7.07	5.60		-41.3
1407			7.96	21.32	6.93	6.08		-49.7
1409			7.90	20.88	6.60	6.24		-55.7
1411			7.88	20.74	6.24	0.00		-59.1
1413			7.86	20.66	6.83	6.35		-59.2
1415			7.85	20.66	6.39	6.49		-59.3
~~1420~~ 1417			7.86	20.67	6.67	6.39		-58.2
1419			7.86	20.67	6.54	6.43		-58.3
~~1427~~								

DO:	
ORP:	

Comments:

Describe Deviations from SOP:

Signature: Joshua Adams **Date:** Friday, April 27, 2018

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1525	LTE Project#	034018012
Sample ID	MW-5	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	7.75	TD of Well	10.17
Time	1505	Depth to Product	NA
(3) Well Casing Volume			low-flow

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	DO mg/L	Comments	ORP mV
1505			7.97	23.48	7.22	0.62		-191.2
1507			7.91	23.52	7.30	0.08		-172.9
1509			7.88	23.11	4.71	0.07		-170.6
1511			7.85	23.18	6.20	0.07		-168.4
1513			7.83	22.87	5.24	0.08		-166.4
1515			7.82	22.74	4.62	0.08		-164.6
1517			7.81	22.98	5.10	0.07		-163.8
1519			7.80	23.01	4.52	0.08		-164.3
1521			7.80	22.89	4.78	0.08		-162.9

DO:	
ORP:	

Comments: collect duplicate, MW-A for this well

Describe Deviations from SOP:

Signature: Joshua Adams **Date:** Friday, April 27, 2018

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1315	LTE Project#	034018012
Sample ID	MW-6	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	7.42	TD of Well	10.18
Time	1230	Depth to Product	NA
(3) Well Casing Volume		low flow	

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C) 18.88	Conductivity (us or ms)	DO	Comments ORP
1245			8.16	~~18.63~~	8.37	6.80mg/L	-127.6mV
1248			8.09	18.47	7.20	6.98	-128.7
1251			8.06	18.26	8.11	7.01	-121.9
1254			8.02	18.02	7.37	7.06	-124.5
1257			8.02	17.94	7.54	7.05	-126.0
1300			8.04	18.14	7.95	7.02	-128.4
1303			8.02	18.23	7.55	7.03	-132.1mV
1305			8.01	18.34	7.35	7.00	-134.2
1307			8.03	18.38	7.56	7.05	-135.1
1309			8.02	18.40	7.61	7.03	-135.1
1311			8.02	18.44	7.58	~~7.02~~ 7.02	-135.6

DO:	
ORP:	

Comments:

Describe Deviations from SOP:

Signature: Josh Adams **Date:** Friday, April 27, 2018

Water Sample Collection Form

Sample Location	Lateral L-2	Client	Williams Four Corners
Sample Date	4/27/2018	Project Name	Lateral L-2 Pipeline Release
Sample Time	1215	LTE Project#	034018012
Sample ID	MW-7	Sampler	Joshua G. Adams
Matrix	Groundwater	Laboratory	Hall Environmental
Turn Around Time	Standard	Shipping Method	Hand delivery
Depth to Water	7.39	TD of Well	10.17
Time	1150	Depth to Product	NA
(3) Well Casing Volume	low-flow		

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Peristaltic Pump - Low Flow

Method of Sampling: Peristaltic Pump - Low Flow

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	DO	Comments	ORP
1156			8.16	19.95	5.96	6.52	clear/light brown tint	23.9
1158			8.05	19.95	7.02	6.68		-105.4
1200			8.05	19.57	4.28	6.73		-108.9
1202			8.06	19.30	7.09	6.78		-117.0
1204			8.07	19.28	6.12	6.77		-121.2
1206			8.08	19.20	~~8.04~~ 6.19	6.86		-127.4
1208			8.10	19.34	6.17	6.82		-130.6
1210			8.11	19.24	6.18	6.77		-134.0
1212			8.11	19.14	6.15	6.78		-139.4
1214			8.11	19.18	6.11	6.81		-142.2

DO:	
ORP:	

Comments:

Describe Deviations from SOP:

Signature: Josh Adams **Date:** Friday, April 27, 2018

ATTACHMENT 3

LABORATORY ANALYTICAL REPORT

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 08, 2018

Danny Burns
Williams Four Corners
188 CR 4900
Bloomfield, NM 87413
TEL: (505) 632-4442
FAX

RE: Lateral L 2 OrderNo.: 1804E35

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 9 sample(s) on 4/28/2018 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1804E35**
Date Reported: **5/8/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners
Client Sample ID: MW-2
Project: Lateral L 2
Collection Date: 4/27/2018 11:30:00 AM
Lab ID: 1804E35-001
Matrix: GROUNDWA
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	170	10		µg/L	10	5/7/2018 6:12:00 PM	R51091
Toluene	33	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Ethylbenzene	11	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2,4-Trimethylbenzene	3.7	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,3,5-Trimethylbenzene	3.0	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Acetone	36	10		µg/L	1	5/4/2018 7:26:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 7:26:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 7:26:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 7:26:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-001

Client Sample ID: MW-2
Collection Date: 4/27/2018 11:30:00 AM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 7:26:00 PM	R51047
Isopropylbenzene	1.3	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 7:26:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 7:26:00 PM	R51047
Xylenes, Total	76	1.5		µg/L	1	5/4/2018 7:26:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	5/4/2018 7:26:00 PM	R51047
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	5/4/2018 7:26:00 PM	R51047
Surr: Dibromofluoromethane	110	70-130		%Rec	1	5/4/2018 7:26:00 PM	R51047
Surr: Toluene-d8	113	70-130		%Rec	1	5/4/2018 7:26:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-002
Client Sample ID: MW-7
Collection Date: 4/27/2018 12:15:00 PM
Matrix: GROUNDWA
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Toluene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Ethylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Naphthalene	ND	2.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1-Methylnaphthalene	ND	4.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
2-Methylnaphthalene	ND	4.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Acetone	ND	10		µg/L	1	5/7/2018 6:36:00 PM	R51091
Bromobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Bromodichloromethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Bromoform	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Bromomethane	ND	3.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
2-Butanone	ND	10		µg/L	1	5/7/2018 6:36:00 PM	R51091
Carbon disulfide	ND	10		µg/L	1	5/7/2018 6:36:00 PM	R51091
Carbon Tetrachloride	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Chlorobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Chloroethane	ND	2.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Chloroform	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Chloromethane	ND	3.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
2-Chlorotoluene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
4-Chlorotoluene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
cis-1,2-DCE	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Dibromochloromethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Dibromomethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,1-Dichloroethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,1-Dichloroethene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2-Dichloropropane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,3-Dichloropropane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
2,2-Dichloropropane	ND	2.0		µg/L	1	5/7/2018 6:36:00 PM	R51091

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-002

Client Sample ID: MW-7
Collection Date: 4/27/2018 12:15:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Hexachlorobutadiene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
2-Hexanone	ND	10		µg/L	1	5/7/2018 6:36:00 PM	R51091
Isopropylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
4-Isopropyltoluene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
4-Methyl-2-pentanone	ND	10		µg/L	1	5/7/2018 6:36:00 PM	R51091
Methylene Chloride	ND	3.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
n-Butylbenzene	ND	3.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
n-Propylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
sec-Butylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Styrene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
tert-Butylbenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
trans-1,2-DCE	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Trichlorofluoromethane	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Vinyl chloride	ND	1.0		µg/L	1	5/7/2018 6:36:00 PM	R51091
Xylenes, Total	ND	1.5		µg/L	1	5/7/2018 6:36:00 PM	R51091
Surr: 1,2-Dichloroethane-d4	118	70-130		%Rec	1	5/7/2018 6:36:00 PM	R51091
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	5/7/2018 6:36:00 PM	R51091
Surr: Dibromofluoromethane	116	70-130		%Rec	1	5/7/2018 6:36:00 PM	R51091
Surr: Toluene-d8	113	70-130		%Rec	1	5/7/2018 6:36:00 PM	R51091

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-003

Client Sample ID: MW-6
Collection Date: 4/27/2018 1:15:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Toluene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Ethylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Acetone	ND	10		µg/L	1	5/4/2018 8:14:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 8:14:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 8:14:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 8:14:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Client Sample ID: MW-6
Project: Lateral L 2
Collection Date: 4/27/2018 1:15:00 PM
Lab ID: 1804E35-003
Matrix: GROUNDWA
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 8:14:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 8:14:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 8:14:00 PM	R51047
Xylenes, Total	ND	1.5		µg/L	1	5/4/2018 8:14:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	114	70-130		%Rec	1	5/4/2018 8:14:00 PM	R51047
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	5/4/2018 8:14:00 PM	R51047
Surr: Dibromofluoromethane	111	70-130		%Rec	1	5/4/2018 8:14:00 PM	R51047
Surr: Toluene-d8	113	70-130		%Rec	1	5/4/2018 8:14:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-004

Client Sample ID: MW-3
Collection Date: 4/27/2018 1:50:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Toluene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Ethylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Acetone	ND	10		µg/L	1	5/4/2018 8:38:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 8:38:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 8:38:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 8:38:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-004

Client Sample ID: MW-3
Collection Date: 4/27/2018 1:50:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 8:38:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 8:38:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 8:38:00 PM	R51047
Xylenes, Total	ND	1.5		µg/L	1	5/4/2018 8:38:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	5/4/2018 8:38:00 PM	R51047
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	5/4/2018 8:38:00 PM	R51047
Surr: Dibromofluoromethane	108	70-130		%Rec	1	5/4/2018 8:38:00 PM	R51047
Surr: Toluene-d8	113	70-130		%Rec	1	5/4/2018 8:38:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-005

Client Sample ID: MW-4
Collection Date: 4/27/2018 2:25:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Toluene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Ethylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Acetone	ND	10		µg/L	1	5/4/2018 9:02:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 9:02:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 9:02:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 9:02:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-005

Client Sample ID: MW-4
Collection Date: 4/27/2018 2:25:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 9:02:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 9:02:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 9:02:00 PM	R51047
Xylenes, Total	ND	1.5		µg/L	1	5/4/2018 9:02:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	5/4/2018 9:02:00 PM	R51047
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	5/4/2018 9:02:00 PM	R51047
Surr: Dibromofluoromethane	110	70-130		%Rec	1	5/4/2018 9:02:00 PM	R51047
Surr: Toluene-d8	114	70-130		%Rec	1	5/4/2018 9:02:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Client Sample ID: MW-5
Project: Lateral L 2
Collection Date: 4/27/2018 3:25:00 PM
Lab ID: 1804E35-006
Matrix: GROUNDWA
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	190	10		µg/L	10	5/7/2018 7:00:00 PM	R51091
Toluene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Ethylbenzene	5.7	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2,4-Trimethylbenzene	1.5	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,3,5-Trimethylbenzene	1.6	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Acetone	20	10		µg/L	1	5/4/2018 9:26:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 9:26:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 9:26:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 9:26:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-006
Matrix: GROUNDWA
Client Sample ID: MW-5
Collection Date: 4/27/2018 3:25:00 PM
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 9:26:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 9:26:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 9:26:00 PM	R51047
Xylenes, Total	9.1	1.5		µg/L	1	5/4/2018 9:26:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	1	5/4/2018 9:26:00 PM	R51047
Surr: 4-Bromofluorobenzene	113	70-130		%Rec	1	5/4/2018 9:26:00 PM	R51047
Surr: Dibromofluoromethane	109	70-130		%Rec	1	5/4/2018 9:26:00 PM	R51047
Surr: Toluene-d8	112	70-130		%Rec	1	5/4/2018 9:26:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-007
Client Sample ID: MW-1
Collection Date: 4/27/2018 3:00:00 PM
Matrix: GROUNDWA
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	200	10		µg/L	10	5/7/2018 7:24:00 PM	R51091
Toluene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Ethylbenzene	5.2	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2,4-Trimethylbenzene	2.2	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,3,5-Trimethylbenzene	2.1	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Acetone	15	10		µg/L	1	5/4/2018 9:50:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 9:50:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 9:50:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 9:50:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-007
Matrix: GROUNDWA
Client Sample ID: MW-1
Collection Date: 4/27/2018 3:00:00 PM
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 9:50:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 9:50:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 9:50:00 PM	R51047
Xylenes, Total	8.7	1.5		µg/L	1	5/4/2018 9:50:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	5/4/2018 9:50:00 PM	R51047
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	5/4/2018 9:50:00 PM	R51047
Surr: Dibromofluoromethane	111	70-130		%Rec	1	5/4/2018 9:50:00 PM	R51047
Surr: Toluene-d8	111	70-130		%Rec	1	5/4/2018 9:50:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-008

Client Sample ID: MW-A
Collection Date: 4/27/2018 3:30:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	200	10		µg/L	10	5/7/2018 7:48:00 PM	R51091
Toluene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Ethylbenzene	6.0	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2,4-Trimethylbenzene	1.6	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,3,5-Trimethylbenzene	1.7	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Acetone	25	10		µg/L	1	5/4/2018 10:14:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 10:14:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 10:14:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 10:14:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-008

Client Sample ID: MW-A
Collection Date: 4/27/2018 3:30:00 PM
Matrix: GROUNDWA **Received Date:** 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 10:14:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 10:14:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 10:14:00 PM	R51047
Xylenes, Total	9.4	1.5		µg/L	1	5/4/2018 10:14:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	5/4/2018 10:14:00 PM	R51047
Surr: 4-Bromofluorobenzene	116	70-130		%Rec	1	5/4/2018 10:14:00 PM	R51047
Surr: Dibromofluoromethane	110	70-130		%Rec	1	5/4/2018 10:14:00 PM	R51047
Surr: Toluene-d8	113	70-130		%Rec	1	5/4/2018 10:14:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Project: Lateral L 2
Lab ID: 1804E35-009

Client Sample ID: Trip Blank
Collection Date:
Matrix: AQUEOUS
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Toluene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Ethylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Naphthalene	ND	2.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
2-Methylnaphthalene	ND	4.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Acetone	ND	10		µg/L	1	5/4/2018 10:38:00 PM	R51047
Bromobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Bromodichloromethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Bromoform	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Bromomethane	ND	3.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
2-Butanone	ND	10		µg/L	1	5/4/2018 10:38:00 PM	R51047
Carbon disulfide	ND	10		µg/L	1	5/4/2018 10:38:00 PM	R51047
Carbon Tetrachloride	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Chlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Chloroethane	ND	2.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Chloroform	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Chloromethane	ND	3.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
2-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
4-Chlorotoluene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
cis-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Dibromochloromethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Dibromomethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,1-Dichloroethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,1-Dichloroethene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,3-Dichloropropane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
2,2-Dichloropropane	ND	2.0		µg/L	1	5/4/2018 10:38:00 PM	R51047

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 Quanitative 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, Inc.

CLIENT: Williams Four Corners
Client Sample ID: Trip Blank
Project: Lateral L 2
Collection Date:
Lab ID: 1804E35-009
Matrix: AQUEOUS
Received Date: 4/28/2018 10:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Hexachlorobutadiene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
2-Hexanone	ND	10		µg/L	1	5/4/2018 10:38:00 PM	R51047
Isopropylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
4-Isopropyltoluene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
4-Methyl-2-pentanone	ND	10		µg/L	1	5/4/2018 10:38:00 PM	R51047
Methylene Chloride	ND	3.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
n-Butylbenzene	ND	3.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
n-Propylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
sec-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Styrene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
tert-Butylbenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
trans-1,2-DCE	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Trichlorofluoromethane	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Vinyl chloride	ND	1.0		µg/L	1	5/4/2018 10:38:00 PM	R51047
Xylenes, Total	ND	1.5		µg/L	1	5/4/2018 10:38:00 PM	R51047
Surr: 1,2-Dichloroethane-d4	114	70-130		%Rec	1	5/4/2018 10:38:00 PM	R51047
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	5/4/2018 10:38:00 PM	R51047
Surr: Dibromofluoromethane	111	70-130		%Rec	1	5/4/2018 10:38:00 PM	R51047
Surr: Toluene-d8	115	70-130		%Rec	1	5/4/2018 10:38:00 PM	R51047

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 Quanitative 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#: **1804E35**

08-May-18

Client: Williams Four Corners

Project: Lateral L 2

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R51047**	RunNo: **51047**
Prep Date:	Analysis Date: **5/4/2018**	SeqNo: **1657986** Units: **µg/L**

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	23	1.0	20.00	0	114	70	130			
Chlorobenzene	23	1.0	20.00	0	115	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	108	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	11		10.00		112	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51047**	RunNo: **51047**
Prep Date:	Analysis Date: **5/4/2018**	SeqNo: **1658053** 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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 Quanitative 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#: **1804E35**

08-May-18

Client: Williams Four Corners

Project: Lateral L 2

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51047**	RunNo: **51047**
Prep Date:	Analysis Date: **5/4/2018**	SeqNo: **1658053** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

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 Quanitative 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#: **1804E35**

08-May-18

Client: Williams Four Corners

Project: Lateral L 2

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51047**	RunNo: **51047**
Prep Date:	Analysis Date: **5/4/2018**	SeqNo: **1658053** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		115	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	11		10.00		115	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R51091**	RunNo: **51091**
Prep Date:	Analysis Date: **5/7/2018**	SeqNo: **1659460** Units: **µg/L**

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	23	1.0	20.00	0	116	70	130			
Chlorobenzene	24	1.0	20.00	0	118	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	11		10.00		110	70	130			

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51091**	RunNo: **51091**
Prep Date:	Analysis Date: **5/7/2018**	SeqNo: **1659463** 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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

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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 Quanitative 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#: **1804E35**

08-May-18

Client: Williams Four Corners

Project: Lateral L 2

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51091**	RunNo: **51091**
Prep Date:	Analysis Date: **5/7/2018**	SeqNo: **1659463** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

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 Quanitative 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#: **1804E35**

08-May-18

Client: Williams Four Corners

Project: Lateral L 2

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51091**	RunNo: **51091**
Prep Date:	Analysis Date: **5/7/2018**	SeqNo: **1659463** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		113	70	130			
Surr: Dibromofluoromethane	12		10.00		115	70	130			
Surr: Toluene-d8	11		10.00		113	70	130			

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
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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: WILLIAMS FOUR CORN Work Order Number: 1804E35 RcptNo: 1

Received By: Andy Freeman 4/28/2018 10:40:00 AM

Completed By: Anne Thorne 4/30/2018 12:37:01 PM

Reviewed By: ENM 4/30/18

Labeled by 04/30/18

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° C to 6.0°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 ☑

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

    Adjusted? _____
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 ☐

    Checked by: _____
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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	3.1	Good	Yes			

Chain-of-Custody Record

Client: Williams Four Corners
Aaron Galer
Mailing Address:
Phone #:
email or Fax#: aaron.galer@williams.com
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: Lateral L-2
Project #: 03401801 2
Project Manager: Danny Burns
Sampler: Josh Adams
On Ice: ☒ Yes ☐ No
Sample Temperature: 3 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1804E35	Analysis Request: GRO / DRO + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
4-27-18	1130	GW	MW-2	3 VOA's	HgCl	001	X									X		
	1215		MW-7			002	X									X		
	1315		MW-6			003	X									X		
	1350		MW-3			004	X									X		
	1425		MW-4			005	X									X		
	~~1500~~	~~1525~~	MW-5			006	X									X		
	~~1525~~	~~1504~~	MW-1			007	X									X		
	1530		MW-A			008	X									X		
																X		
			Trip Blank			009										X		

Date	Time	Relinquished by:	Received by:	Date	Time
4/27/18	1614			4/27/18	1614
4/27/18	1850			4/28/18	1040

Remarks: please run 8260B
cc: dburns@henv.com

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.