3R - 422 / 3RP- 381

Incident# nCS1621656998

GCU 170 ANNUAL MONITORING REPORT

Type text here

4/29/2020

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NCS1621656998
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: BP America Production Co	OGRID: 778	Annual Monitoring Report
Contact Name: Steve Moskal	Contact Telephone: (505) 330-9179	
Contact email: steven.moskal@bpx.com	Incident # *(assigned by OCD)*	
Contact mailing address: 1199 Main St., Suite 101, Durango CO, 81301		

Location of Release Source

Latitude: 36.680279° Longitude: -108.07166°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Gallegos Canyon Unit 170	Site Type: Abandoned Natural Gas Production Well
Date Release Discovered: March 1995	API#: 30-045-07658

Unit Letter	Section	Township	Range	County
K	32	T29N	R12W	San Juan

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): **Unknown - Historical**	Volume Recovered (bbls): **0**
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **Unknown - Historical**	Volume Recovered (bbls): **0**
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:
Historical pit closure (1995) and condensate release in 2016 from a downhole well integrity issue.

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: _____ Date: April 28, 2020

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	12-15 (ft bgs)
Did this release impact groundwater or surface water?	☒ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: Date: April 29, 2020

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: Date:

****Continued monitoring report****

State of New Mexico
Oil Conservation Division

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Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature:  Date: April 29, 2020

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: Cory Smith Date: 4/29/2020

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature:  Date: 6/9/2020

****Continued monitoring report****

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: _____ Date: _____

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

BP America Production Co.

GROUNDWATER MONITORING REPORT

Gallegos Canyon Unit #170
API #: 30-045-07658
Administrative/Environmental Order #: 3RP-381
(K) Section 35, T29N, R12W, NMPM
San Juan County, New Mexico

PREPARED FOR:
NEW MEXICO OIL CONSERVATION DIVISION
1000 Rio Brazos Road
Aztec, New Mexico 87410

APRIL 2020

PREPARED BY:
BLAGG ENGINEERING, INC.

Consulting Petroleum / Reclamation Services
P.O. Box 87
Bloomfield, New Mexico 87413

GROUNDWATER MONITORING REPORT
BPX ENERGY INC.
Gallegos Canyon Unit #170

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APPENDICES

GROUNDWATER MONITORING REPORT
BPX ENERGY INC.
Gallegos Canyon Unit (GCU) # 170

INTRODUCTION

Blagg Engineering, Inc. (BEI) has been retained by BPX Energy Inc. (BPX) to conduct groundwater monitoring at its GCU #170 well site, located in rural San Juan County, New Mexico. As mentioned in a previous report dated May 30, 2017, the purpose of monitoring is to evaluate groundwater quality following remedial activities targeting removal of hydrocarbon impacted soils resulting from a historical (1995) and more recent (2016) releases. Documentation of these occurrences have been recorded and submitted to the New Mexico Oil Conservation Division (NMOCD) in Santa Fe and Aztec offices. All groundwater activities have followed prior NMOCD approved workplans.

A total of eight (8) groundwater monitor wells have been sampled on a bi-annual schedule since their installation in April 2017 (see Figure 1). Bore hole logs along with soil lithology descriptions have previously been submitted to NMOCD. Groundwater depths continue to show fluctuations between six (6) to ten (10) feet (ft.) below surface grade.

Laboratory analytical results of groundwater samples collected in September 2018, June 2019, December 2019 and March 2020 are included within this report.

MONITORING PROCEDURES

Groundwater samples were collected from site monitor wells (Figure 1) following US EPA: SW-846 protocol. Samples were collected using new disposable bailers and placed into new laboratory supplied 1,000 ml plastic containers. The samples were preserved cool on ice and then express delivered to a qualified laboratory for testing. Analytical procedures included general chemistry parameters noted on the laboratory Chain-of-Custody Records and followed standard and US EPA methods. Purged water generated during monitor well sampling was disposed of utilizing an above-grade tank located at BPX's nearby GCU #170E well site (API #: 30-045-24175; Unit letter E, Section 35, T29N, R12W).

MONITORING FINDINGS

Based on the enclosed site monitor well information, groundwater flow is consistently in a northwest direction throughout the year, as depicted on the attached groundwater gradient maps. The local irrigation season begins on April 15 and ends on October 15 each year. Groundwater fluctuations are strongly affected by this artificial application of water to the ground surface.

The only remaining constituents of concern at the site are sulfate and total dissolved solids (TDS). Prior monitoring has demonstrated that the regulated hydrocarbon constituents of benzene, toluene, ethyl-benzene and total xylenes (BTEX) have been fully remediated and further testing for these constituents has not been required by NMOCD since October, 2017. Sulfate is present at levels in excess of New Mexico Water Quality Control Commission (NMWQCC) standards in source area monitor wells MW-3A and MW-7, and in down-gradient monitor wells MW-5 and MW-8. TDS is present at levels exceeding

NMWQCC standards in source area monitor wells MW-2A, MW-3A and MW-7 and in down-gradient wells MW-5, MW-8 and MW-9.

There are no known domestic or public water supply wells affected by the residual sulfate and TDS impacts at the site and no risk to human health or livestock is present. Continued monitoring of groundwater quality is scheduled to determine the long term natural degradation of impacts. If this monitoring finds that a risk to human health or livestock may occur then alternative remedial actions will be evaluated.

BPX ENERGY INC.

GCU # 170 - (Production Tank & Historical Releases)

Unit Letter K, Section 35, T29N, R12W - API Number: 30-045-07658

Administrative/Enviromental Order #: 3RP-422-0 | Incident/Application #: nAUTOfWCO00211

Field & Laboratory Data from Groundwater Monitor Wells

	FIELD &/or LAB PARAMETERS								
Sample ID	Sample Date	Sample Time	Depth to Groundwater (feet)	Total MW Length (feet)	pH (Lab)	Conductivity (Lab) (µmhos/cm)	Conductivity (Field) (µmhos/cm)	Temperature (°Celcius)	Volume Purged (gallons)
MW # 2A (source area)	04/17/17	1002	8.71	14.80	7.63	1,400	1,680	13.2	3.00
	08/10/17	0942	7.43	"	7.63	1,100	1,070	16.0	3.75
	10/19/17	0944	7.02	"	7.45	1,200	1,570	15.7	4.00
	04/10/18	0842	7.21	"	7.49	1,400	1,440	14.5	3.75
	09/19/18	0915	6.99	"	7.62	1,000	1,310	18.1	4.00
	06/25/19	0915	6.70	"	7.27	1,300	2,000	15.2	3.10
	12/11/19	0939	8.01	"	7.70	1,500	1,490	13.2	3.50
	03/25/20	0936	8.87	"	7.58	1,600	1,660	11.4	3.00
MW # 3A (source area)	04/17/17	1104	7.92	15.88	7.49	1,500	1,790	13.1	4.00
	08/10/17	1145	6.74	"	7.59	2,100	1,850	16.5	5.25
	10/19/17	1001	6.43	"	7.47	2,000	1,250	15.7	4.75
	04/10/18	0918	6.60	"	7.60	2,000	1,520	14.4	4.50
	09/19/18	0932	6.39	"	7.62	1,700	1,280	18.2	4.75
	06/25/19	0949	7.80	"	7.30	1,800	1,410	16.5	4.10
	12/11/19	1014	7.22	"	7.81	1,600	1,430	13.1	4.25
	03/25/20	0924	7.98	"	7.96	1,800	1,670	10.9	4.00
MW # 4A (source area)	04/17/17	0906	8.86	15.98	7.70	1,100	1,450	12.1	3.50
	08/10/17	1023	7.51	"	7.73	950	1,110	16.1	4.25
	10/19/17	0922	7.10	"	7.52	990	1,090	16.3	4.50
	04/10/18	0829	7.31	"	7.67	1,100	1,100	14.8	4.25
	09/19/18	0903	7.12	"	7.69	1,000	1,110	17.8	4.50
	06/25/19	0851	8.78	"	7.41	1,100	1,100	14.9	3.00
	12/11/19	0915	8.09	"	7.82	1,400	1,460	13.6	4.00
	03/25/20	0913	8.98	"	7.80	1,100	1,310	11.0	3.50
MW # 5 (down gradient)	04/17/17	1225	7.47	19.24	7.58	1,900	1,710	13.3	5.75
	08/10/17	1321	6.42	"	7.74	4,200	2,200	16.4	6.50
	10/19/17	1158	6.15	"	7.44	3,500	1,620	15.9	6.50
	04/10/18	1015	6.26	"	7.60	2,400	1,830	14.7	6.50
	09/19/18	0830	6.10	"	7.95	2,100	1,360	16.3	6.50
	06/25/19	1023	7.29	"	7.37	2,200	1,800	15.7	6.00
	12/11/19	1054	6.82	"	7.87	2,000	2,000	13.3	6.25
	03/25/20	1002	7.50	"	7.79	2,100	2,100	11.8	6.00
MW # 6 (up gradient)	04/17/17	0935	9.98	15.98	7.61	830	800	12.6	3.00
	08/10/17	0908	8.47	"	7.69	820	820	15.8	4.00
	10/19/17	0902	7.98	"	7.40	1,000	920	15.6	4.00
	04/10/18	0806	8.27	"	7.67	930	900	14.1	3.75
	09/19/18	0752	7.98	"	7.67	1,200	1,210	17.9	4.00
	06/25/19	0902	9.99	"	7.42	880	850	14.6	3.00
	12/11/19	0928	9.20	"	7.63	830	850	13.6	3.50
	03/25/20	0900	10.21	"	7.97	800	800	11.6	3.00
MW # 7 (side gradient)	04/17/17	1036	9.25	18.78	7.60	1,900	1,850	14.1	4.75
	08/10/17	1104	8.17	"	7.60	1,800	1,960	16.8	5.50
	10/19/17	1102	7.81	"	7.40	1,900	1,670	16.1	5.50
	04/10/18	0933	7.99	"	7.56	1,800	1,710	14.5	5.25
	09/19/18	0948	7.72	"	7.66	1,500	1,250	17.7	5.50
	06/25/19	0933	9.20	"	7.34	1,800	1,420	16.6	4.80
	12/11/19	1004	8.61	"	7.82	1,900	1,770	12.3	5.00
	03/25/20	0950	9.36	"	7.95	1,900	1,830	10.8	4.75
				NMWQCC STANDARDS -	6 - 9				

BPX ENERGY INC.

GCU # 170 - (Production Tank & Historical Releases)

Unit Letter K, Section 35, T29N, R12W - API Number: 30-045-07658

Administrative/Enviromental Order #: 3RP-422-0 | Incident/Application #: nAUTOfWCO00211

	FIELD &/or LAB PARAMETERS								
Sample ID	**Sample Date**	**Sample Time**	**Depth to Groundwater (feet)**	**Total MW Length (feet)**	**pH (Lab)**	**Conductivity (Lab) (µmhos/cm)**	**Conductivity (Field) (µmhos/cm)**	**Temperature (°Celcius)**	**Volume Purged (gallons)**
MW # 8 (down gradient)	04/17/17	1157	8.63	18.08	7.58	2,300	2,300	13.4	4.75
	08/10/17	1245	7.78	"	7.69	2,000	1,900	16.3	5.25
	10/19/17	1129	7.54	"	7.53	2,200	1,780	15.7	5.25
	04/10/18	0954	7.64	"	7.63	2,000	1,880	14.2	5.25
	09/19/18	0848	7.45	"	8.10	2,100	1,820	16.0	5.50
	06/25/19	1008	8.54	"	7.40	2,000	1,190	15.6	4.80
	12/11/19	1025	8.12	"	7.84	2,200	2,100	12.6	5.00
	03/25/20	1016	8.72	"	7.97	2,100	2,000	11.0	4.75
MW # 9 (down gradient)	04/17/17	1130	11.38	18.43	7.75	1,200	1,530	13.8	3.50
	08/10/17	1218	10.16	"	7.81	1,100	1,210	16.3	4.25
	10/19/17	1029	9.84	"	7.66	1,200	1,070	16.3	4.25
	04/10/18	0858	9.98	"	7.72	970	1,240	14.5	4.25
	09/19/18	0809	9.85	"	7.91	1,100	1,180	16.4	4.25
	06/25/19	0840	11.22	"	7.56	1,100	240	14.4	3.60
	12/11/19	0900	10.63	"	7.88	1,500	1,450	13.6	4.00
	03/25/20	0847	11.44	"	7.91	1,500	1,440	11.6	3.50
				NMWQCC STANDARDS -	**6 - 9**				

BPX ENERGY INC.

GCU # 170 - (Production Tank & Historical Releases)

Unit Letter K, Section 35, T29N, R12W - API Number: 30-045-07658

Administrative/Enviromental Order #: 3RP-422-0 | Incident/Application #: nAUTOfWCO00211

			LABORATORY PARAMETERS						
Sample ID	**Sample Date**	**Sample Time**	**Chloride (mg/L)**	**Sulfate (mg/L)**	**TDS (mg/L)**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethyl - benzene (µg/L)**	**Total Xylenes (µg/L)**
MW # 2A (source area)	04/17/17	1002	8.8	440	**1,010**	<1.0	<1.0	<1.0	<1.5
	08/10/17	0942	8.1	220	780	<1.0	<1.0	<1.0	<1.5
	10/19/17	0944	5.3	210	795	<1.0	<1.0	<1.0	<1.5
	04/10/18	0842	6.6	340	1,000	-	-	-	-
	09/19/18	0915	6.0	140	706	-	-	-	-
	06/25/19	0915	8.6	350	940	-	-	-	-
	12/11/19	0939	11	420	**1,090**	-	-	-	-
	03/25/20	0936	17	490	**1,240**	-	-	-	-
MW # 3A (source area)	04/17/17	1104	13	520	**1,160**	<1.0	<1.0	<1.0	<1.5
	08/10/17	1145	6.5	**980**	**1,940**	<1.0	<1.0	<1.0	<1.5
	10/19/17	1001	6.1	**820**	**1,670**	<1.0	<1.0	<1.0	<1.5
	04/10/18	0918	9.6	**810**	**1,680**	-	-	-	-
	09/19/18	0932	6.4	**710**	**1,310**	-	-	-	-
	06/25/19	0949	8.0	**790**	**1,550**	-	-	-	-
	12/11/19	1014	8.5	**680**	**1,400**	-	-	-	-
	03/25/20	0924	11	**820**	**1,570**	-	-	-	-
MW # 4A (source area)	04/17/17	0906	7.7	270	770	<1.0	<1.0	<1.0	<1.5
	08/10/17	1023	6.0	140	650	<1.0	<1.0	<1.0	<1.5
	10/19/17	0922	7.4	140	596	<1.0	<1.0	<1.0	<1.5
	04/10/18	0829	10.0	140	740	-	-	-	-
	09/19/18	0903	8.2	140	690	-	-	-	-
	06/25/19	0851	10	140	185	-	-	-	-
	12/11/19	0915	79	230	955	-	-	-	-
	03/25/20	0913	27	190	820	-	-	-	-
MW # 5 (down gradient)	04/17/17	1225	12	**840**	**1,490**	<1.0	<1.0	<1.0	<1.5
	08/10/17	1321	8.4	**2,500**	**3,460**	<1.0	<1.0	<1.0	<1.5
	10/19/17	1158	6.1	**1,800**	**3,060**	<1.0	<1.0	<1.0	<1.5
	04/10/18	1015	8.7	**1,100**	**2,140**	-	-	-	-
	09/19/18	0830	7.3	**910**	**1,610**	-	-	-	-
	06/25/19	1023	8.3	**1,100**	**1,610**	-	-	-	-
	12/11/19	1054	7.6	**980**	**1,660**	-	-	-	-
	03/25/20	1002	11	**1,100**	**1,880**	-	-	-	-
MW # 6 (up gradient)	04/17/17	0935	5.6	85	450	<1.0	<1.0	<1.0	<1.5
	08/10/17	0908	7.6	76	560	<1.0	<1.0	<1.0	<1.5
	10/19/17	0902	5.7	77	540	<1.0	<1.0	<1.0	<1.5
	04/10/18	0806	6.8	75	580	-	-	-	-
	09/19/18	0752	16.0	130	780	-	-	-	-
	06/25/19	0902	<5.0	72	395	-	-	-	-
	12/11/19	0928	4.0	75	610	-	-	-	-
	03/25/20	0900	4	77	585	-	-	-	-
MW # 7 (side gradient)	04/17/17	1036	7.7	**930**	**1,610**	<1.0	<1.0	<1.0	<1.5
	08/10/17	1104	17.0	**690**	**1,570**	<1.0	<1.0	<1.0	<1.5
	10/19/17	1102	<5.0	**730**	**1,510**	<1.0	<1.0	<1.0	<1.5
	04/10/18	0933	6.6	**720**	**1,480**	-	-	-	-
	09/19/18	0948	6.9	500	**1,100**	-	-	-	-
	06/25/19	0933	9.7	**710**	**1,180**	-	-	-	-
	12/11/19	1004	11	**920**	**1,670**	-	-	-	-
	03/25/20	0950	8.6	**940**	**1,680**	-	-	-	-
NMWQCC STANDARDS -			**250**	**600**	**1,000**	**10**	**750**	**750**	**620**

BPX ENERGY INC.

GCU # 170 - (Production Tank & Historical Releases)

Unit Letter K, Section 35, T29N, R12W - API Number: 30-045-07658

Administrative/Enviromental Order #: 3RP-422-0 | Incident/Application #: nAUTOfWCO00211

			LABORATORY PARAMETERS						
Sample ID	**Sample Date**	**Sample Time**	**Chloride (mg/L)**	**Sulfate (mg/L)**	**TDS (mg/L)**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethyl - benzene (µg/L)**	**Total Xylenes (µg/L)**
MW # 8 (down gradient)	04/17/17	1157	12	**1,200**	**1,880**	<1.0	<1.0	<1.0	<1.5
	08/10/17	1245	8.7	**1,100**	**1,760**	<1.0	<1.0	<1.0	<1.5
	10/19/17	1129	6.3	**920**	**1,760**	<1.0	<1.0	<1.0	<1.5
	04/10/18	0954	7.5	**680**	**1,600**	-	-	-	-
	09/19/18	0848	15.0	**910**	**1,650**	-	-	-	-
	06/25/19	1008	8.2	**930**	**1,660**	-	-	-	-
	12/11/19	1025	11	**990**	**1,940**	-	-	-	-
	03/25/20	1016	9	**1,200**	**1,970**	-	-	-	-
MW # 9 (down gradient)	04/17/17	1130	55	220	800	<1.0	<1.0	<1.0	<1.5
	08/10/17	1218	38	210	850	<1.0	<1.0	<1.0	<1.5
	10/19/17	1029	21	190	710	<1.0	<1.0	<1.0	<1.5
	04/10/18	0858	24	120	615	-	-	-	-
	09/19/18	0809	22	150	700	-	-	-	-
	06/25/19	0840	23	220	650	-	-	-	-
	12/11/19	0900	18	500	**1,180**	-	-	-	-
	03/25/20	0847	31	460	**1,060**	-	-	-	-
NMWQCC STANDARDS -			**250**	**600**	**1,000**	**10**	**750**	**750**	**620**

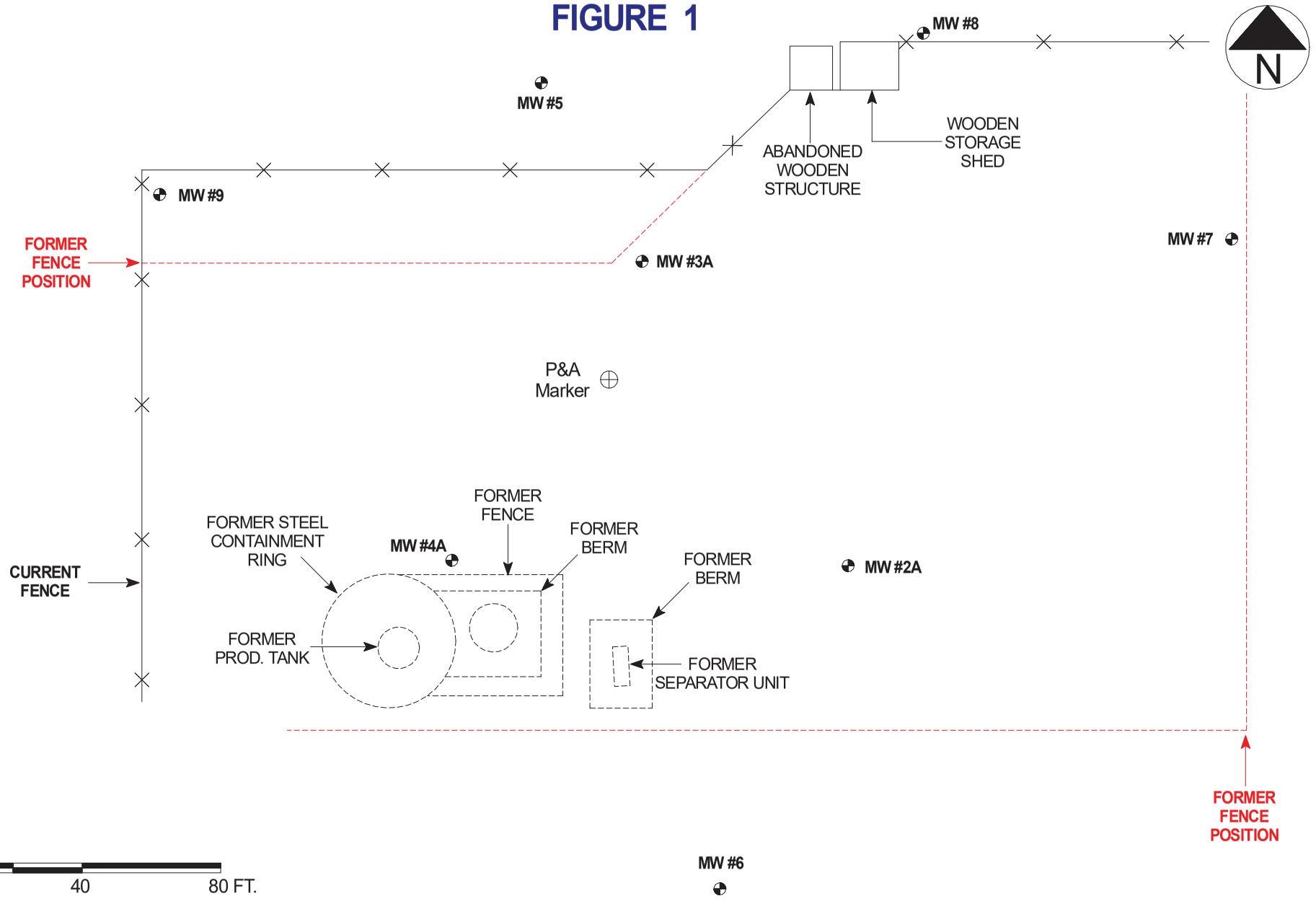
Notes: **Depth to groundwater measured from casing top of monitor well.**
Groundwater standards are applied to values assigned in blue highlighted boxes or confirmed background levels, whichever is higher.

MW - Monitor well
µmhos/cm - Micromhos per centimeter
TDS - Total dissolved solids
mg/L - Milligram per Liter
µg/L - Microgram per liter
NMWQCC - New Mexico Water Quality Control Commission

APPENDIX A

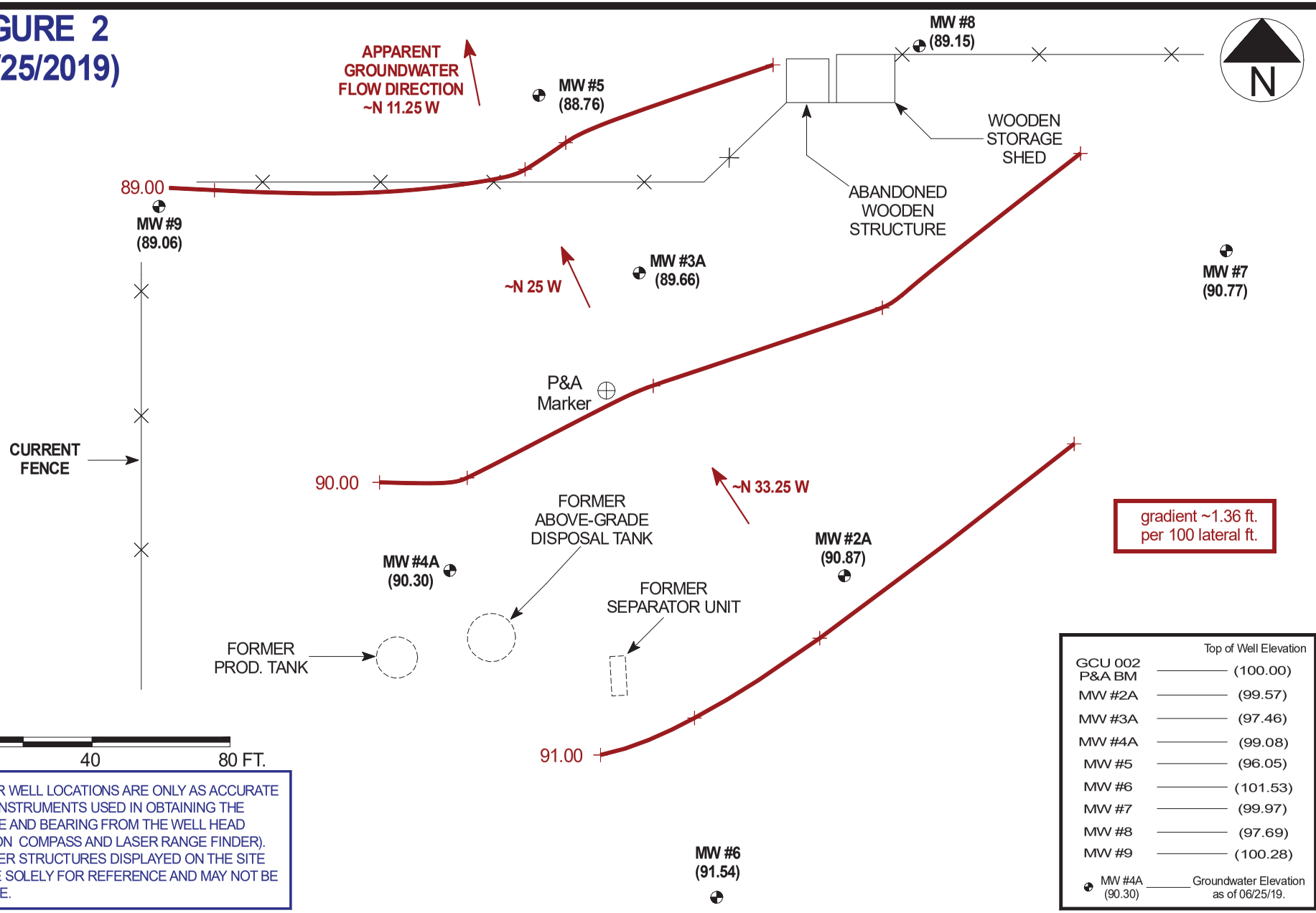
Figures

FIGURE 1



BP AMERICA PRODUCTION COMPANY GCU # 170 NE/4 SW/4 SEC. 35, T29N, R12W SAN JUAN COUNTY, NEW MEXICO	B LAGG ENGINEERING, I NC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: GROUNDWATER MONITORING DRAWN BY: NJV DRAFTED: 04/21/2017 FILENAME: GCU170 SM 2017-04-17.SKF	SITE MAP 04/17

FIGURE 2 (06/25/2019)



gradient ~1.36 ft. per 100 lateral ft.

	Top of Well Elevation
GCU 002 P&A BM	(100.00)
MW #2A	(99.57)
MW #3A	(97.46)
MW #4A	(99.08)
MW #5	(96.05)
MW #6	(101.53)
MW #7	(99.97)
MW #8	(97.69)
MW #9	(100.28)

MW #4A (90.30) ——— Groundwater Elevation as of 06/25/19.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

BP AMERICA PRODUCTION COMPANY

GCU # 170

NE/4 SW/4 SEC. 35, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

B LAGG ENGINEERING, I NC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: GROUNDWATER MONITORING

FILENAME: GCU170 gw map 20190625.SKF

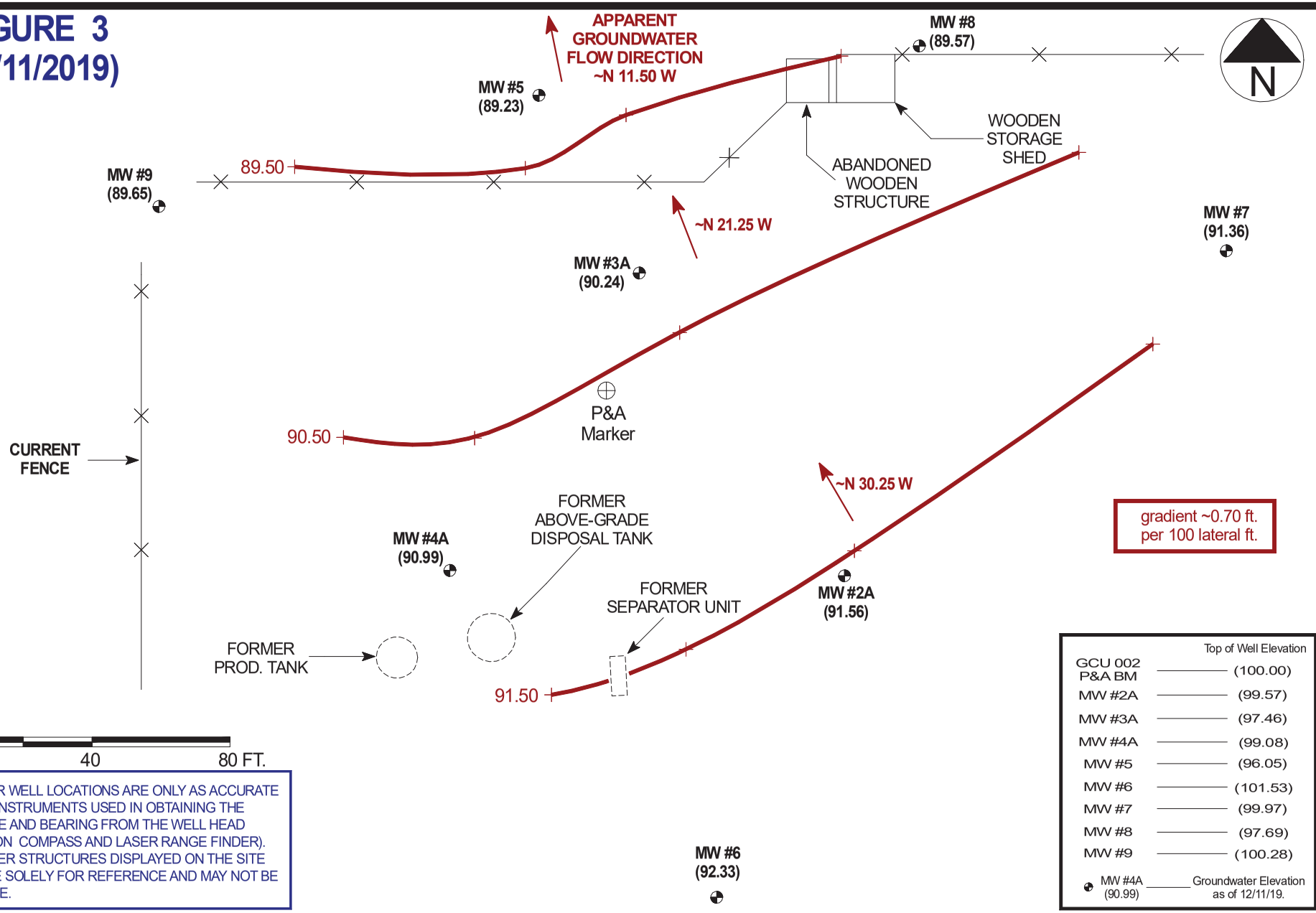
REVISED: 07/11/2019

DRAWN BY: NJV

GROUNDWATER CONTOUR MAP

June 2019

FIGURE 3
(12/11/2019)



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

Top of Well Elevation	
GCU 002 P&A BM	(100.00)
MW #2A	(99.57)
MW #3A	(97.46)
MW #4A	(99.08)
MW #5	(96.05)
MW #6	(101.53)
MW #7	(99.97)
MW #8	(97.69)
MW #9	(100.28)

MW #4A (90.99) ——— Groundwater Elevation as of 12/11/19.

BP AMERICA PRODUCTION COMPANY

GCU # 170

NE/4 SW/4 SEC. 35, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

B LAGG ENGINEERING, I NC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: GROUNDWATER MONITORING

FILENAME: GCU170 gw map 20191211.SKF

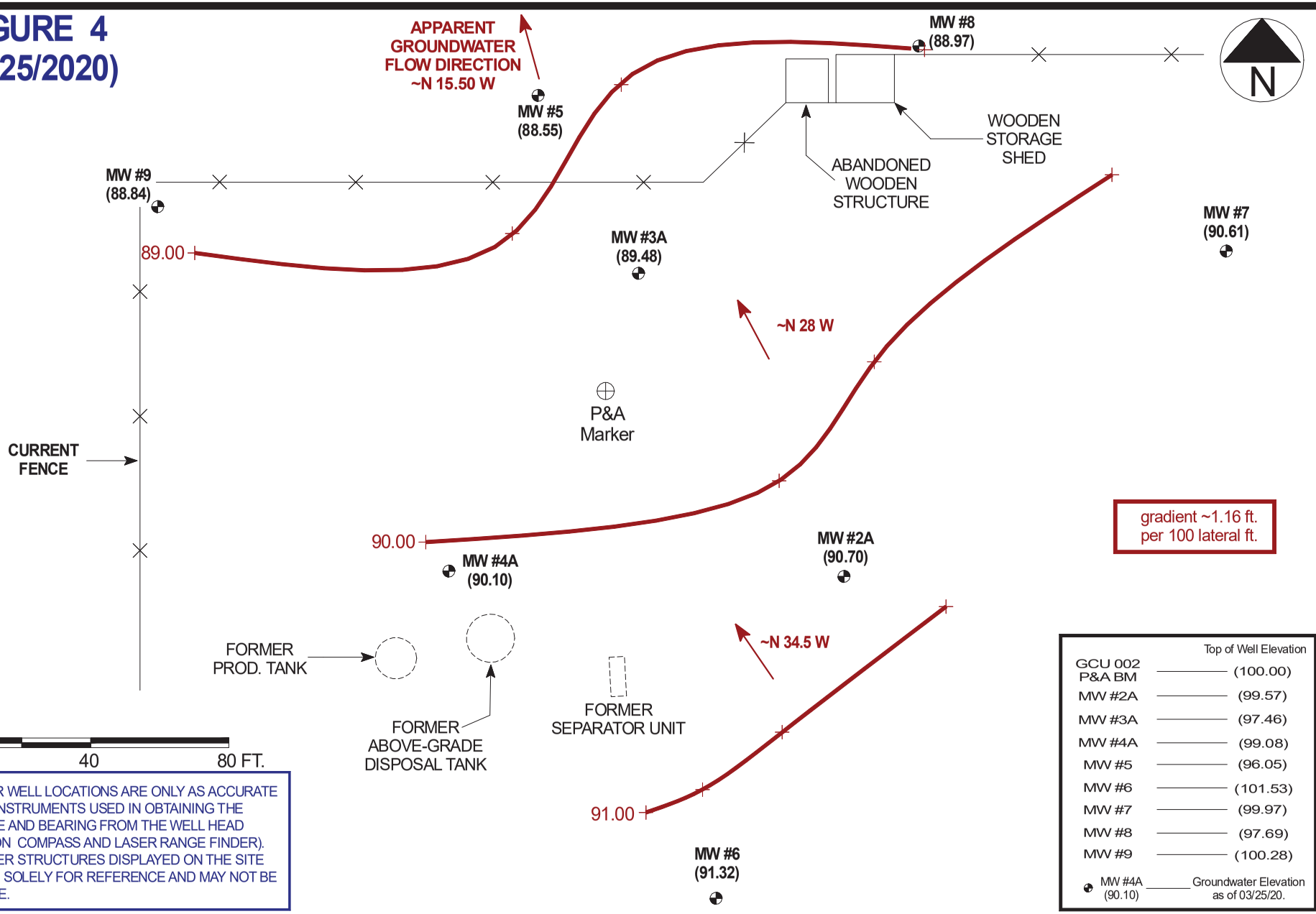
REVISED: 12/23/2019

DRAWN BY: NJV

GROUNDWATER CONTOUR MAP

December 2019

FIGURE 4 (03/25/2020)



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

Top of Well Elevation	
GCU 002 P&A BM	(100.00)
MW #2A	(99.57)
MW #3A	(97.46)
MW #4A	(99.08)
MW #5	(96.05)
MW #6	(101.53)
MW #7	(99.97)
MW #8	(97.69)
MW #9	(100.28)

MW #4A (90.10) ——— Groundwater Elevation as of 03/25/20.

BP AMERICA PRODUCTION COMPANY

GCU # 170

NE/4 SW/4 SEC. 35, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

B LAGG ENGINEERING, I NC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: GROUNDWATER MONITORING

FILENAME: GCU170 gw map 20200325.SKF

REVISED: 04/02/2020

DRAWN BY: NJV

GROUNDWATER CONTOUR MAP

March 2020

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : **BPX ENERGY INC.**

CHAIN-OF-CUSTODY # : N / A

GCU # 170
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : June 25, 2019

Filename : GCU 170 mw log 2019-06-25.xls

DEVELOPER / SAMPLER : N J V / J C B

PROJECT MANAGER : STEVE MOSKAL

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
2A	99.57	90.87	8.70	14.80	0915	6.7	2,000	15.2	3.00
3A	97.46	89.66	7.80	15.88	0949	7.0	1,410	16.5	4.00
4A	99.08	90.30	8.78	15.98	0851	6.9	1,100	14.9	3.50
5	96.05	88.76	7.29	19.30	1023	7.0	1,800	15.7	6.00
6	101.53	91.54	9.99	15.98	0902	6.6	850	14.6	3.00
7	99.97	90.77	9.20	18.78	0933	6.5	1,420	16.6	4.75
8	97.69	89.15	8.54	18.08	1008	6.6	1,180	15.6	4.75
9	100.28	89.06	11.22	18.43	0840	7.3	1,240	14.4	3.50

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,060
DATE & TIME =	06/25/19	0630

NOTES : Volume of water purged from well prior to sampling; V = pi x r^2 x h x 7.48 gal./ft^3) x 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes: 2.00" well diameter = 0.49 gal./ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in all monitor wells. Collected sample for general chemistry analyses. Purged all well using new & disposable 2 inch hand bailers. All monitor wells displayed murky brown appearance, MW #5 first 3 bailers displayed blackish tint most likely from organic material decay within pvc, then eventually phasing into murky brown appearance. No physical indicators observed within purged waters of any hydrocarbon components (sheen, odor, etc.).

Monitor well tops surveyed on 04/20/2017 , benchmark used for elevations near GCU 002 P&A marker .
MW #2A, #3A, #4A, #5, & #6 casing tops completed with locking caps & flush mount well covers.
MW #7, #8, & #9 casing tops completed with slip caps & above-grade well protectors with padlocked lids.

on-site	**7:45 AM**	temp	**56 F**
off-site	**10:45 AM**	temp	**78 F**
sky cond.		**Mostly sunny**	
wind speed	**0 - 10**	direct.	**E - SE**

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : **BPX ENERGY INC.**

CHAIN-OF-CUSTODY # : N / A

GCU # 170
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : December 11, 2019

Filename : GCU 170 mw log 2019-12-11.xls

DEVELOPER / SAMPLER : N J V / J C B

PROJECT MANAGER : STEVE MOSKAL

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
2A	99.57	91.56	8.01	14.80	0939	6.8	1,490	13.2	3.50
3A	97.46	90.24	7.22	15.88	1014	7.1	1,430	13.1	4.25
4A	99.08	90.99	8.09	15.98	0915	6.9	1,460	13.6	4.00
5	96.05	89.23	6.82	19.30	1054	7.2	2,000	13.3	6.25
6	101.53	92.33	9.20	15.98	0928	6.9	850	13.6	3.50
7	99.97	91.36	8.61	18.78	1004	7.1	1,770	12.3	5.00
8	97.69	89.57	8.12	18.08	1025	7.1	2,100	12.6	5.00
9	100.28	89.65	10.63	18.43	0900	7.0	1,450	13.6	4.00
					INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,060		
					DATE & TIME =	12/10/19	0700		

NOTES : Volume of water purged from well prior to sampling; V = pi x r^2 x h x 7.48 gal./ft^3) x 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes: 2.00" well diameter = 0.49 gal./ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in all monitor wells. Collected sample for general chemistry analyses. Purged all well using new & disposable 2 inch hand bailers. All monitor wells displayed murky brown appearance. No physical indicators observed within purged waters of any hydrocarbon components (sheen, odor, etc.).

Monitor well tops surveyed on 04/20/2017 , benchmark used for elevations near GCU 002 P&A marker .
MW #2A, #3A, #4A, #5, & #6 casing tops completed with locking caps & flush mount well covers.
MW #7, #8, & #9 casing tops completed with slip caps & above-grade well protectors with padlocked lids.

on-site	**8:00 AM**	temp	**26 F**
off-site	**11:15 AM**	temp	**36 F**
sky cond.	**Mostly cloudy**		
wind speed	**0 - 10**	direct.	**E - ESE**

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : **BPX ENERGY INC.**

CHAIN-OF-CUSTODY # : N / A

GCU # 170
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : March 25, 2020
Filename : GCU 170 mw log 2020-03-25.xls

DEVELOPER / SAMPLER : N J V / J C B
PROJECT MANAGER : S. MOSKAL

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
2A	99.57	90.70	8.87	14.80	0936	6.8	1,660	11.4	3.00
3A	97.46	89.48	7.98	15.88	0924	7.0	1,670	10.9	4.00
4A	99.08	90.10	8.98	15.98	0913	6.8	1,310	11.0	3.50
5	96.05	88.55	7.50	19.30	1002	7.1	2,100	11.8	6.00
6	101.53	91.32	10.21	15.98	0900	6.9	800	11.6	3.00
7	99.97	90.61	9.36	18.78	0950	7.1	1,830	10.8	5.00
8	97.69	88.97	8.72	18.08	1016	7.0	2,000	11.0	5.00
9	100.28	88.84	11.44	18.43	0847	7.2	1,440	11.6	3.50
					INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	1,000		
					DATE & TIME =	03/25/20	0730		

NOTES : Volume of water purged from well prior to sampling: V = pi x r^2 x h x 7.48 gal./ft^3) x 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes: 2.00" well diameter = 0.49 gal./ft. of water.

Comments or note well diameter if not standard 2".

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Monitor well tops surveyed on 04/20/2017 , benchmark used for elevations near GCU 002 P&A marker .
MW #2A, #3A, #4A, #5, & #6 casing tops completed with locking caps & flush mount well covers.
MW #7, #8, & #9 casing tops completed with slip caps & above-grade well protectors with padlocked lids.

on-site	**8:30 AM**	temp	**40 F**
off-site	**10:45 AM**	temp	**47 F**
sky cond.	**Mostly cloudy**		
wind speed	**0 - 5**	direct.	**E - ENE**

APPENDIX B

Laboratory Data Reports

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

October 22, 2018

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX (505) 632-3903

RE: GCU 170 OrderNo.: 1809B78

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/20/2018 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1809B78**
Date Reported: **10/22/2018**

CLIENT: Blagg Engineering
Client Sample ID: MW #2A
Project: GCU 170
Collection Date: 9/19/2018 9:15:00 AM
Lab ID: 1809B78-001
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	470	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9980	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.23	0.10		mg/L	1	9/20/2018 3:14:47 PM	R54332
Chloride	6.0	0.50		mg/L	1	9/20/2018 3:14:47 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 3:14:47 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 3:14:47 PM	R54332
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/20/2018 3:14:47 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 3:14:47 PM	R54332
Sulfate	140	10		mg/L	20	9/20/2018 3:27:39 PM	R54332
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1000	5.0		µmhos/c	1	9/21/2018 1:27:33 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	435.4	20.00		mg/L Ca	1	9/21/2018 1:27:33 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 1:27:33 AM	R54350
Total Alkalinity (as CaCO3)	435.4	20.00		mg/L Ca	1	9/21/2018 1:27:33 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	706	40.0	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.62		H	pH units	1	9/21/2018 1:27:33 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	160	5.0		mg/L	5	10/5/2018 1:07:45 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 1:01:08 AM	B54658
Magnesium	16	1.0		mg/L	1	10/5/2018 1:01:08 AM	B54658
Potassium	1.8	1.0		mg/L	1	10/5/2018 1:01:08 AM	B54658
Sodium	63	5.0		mg/L	5	10/5/2018 1:07:45 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #3A
Project: GCU 170
Collection Date: 9/19/2018 9:32:00 AM
Lab ID: 1809B78-002
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	860	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9990	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.27	0.10		mg/L	1	9/20/2018 3:40:31 PM	R54332
Chloride	6.4	0.50		mg/L	1	9/20/2018 3:40:31 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 3:40:31 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 3:40:31 PM	R54332
Nitrogen, Nitrate (As N)	1.3	0.10		mg/L	1	9/20/2018 3:40:31 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 3:40:31 PM	R54332
Sulfate	710	10	*	mg/L	20	9/20/2018 3:53:22 PM	R54332
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1700	5.0		µmhos/c	1	9/21/2018 1:53:44 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	304.3	20.00		mg/L Ca	1	9/21/2018 1:53:44 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 1:53:44 AM	R54350
Total Alkalinity (as CaCO3)	304.3	20.00		mg/L Ca	1	9/21/2018 1:53:44 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1310	40.0	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.82		H	pH units	1	9/21/2018 1:53:44 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	280	10		mg/L	10	10/5/2018 1:36:17 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 1:16:23 AM	B54658
Magnesium	40	1.0		mg/L	1	10/5/2018 1:16:23 AM	B54658
Potassium	3.6	1.0		mg/L	1	10/5/2018 1:16:23 AM	B54658
Sodium	66	5.0		mg/L	5	10/5/2018 1:29:40 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #4A
Project: GCU 170
Collection Date: 9/19/2018 9:03:00 AM
Lab ID: 1809B78-003
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	460	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9976	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.48	0.10		mg/L	1	9/20/2018 4:06:13 PM	R54332
Chloride	8.2	0.50		mg/L	1	9/20/2018 4:06:13 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 4:06:13 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 4:06:13 PM	R54332
Nitrogen, Nitrate (As N)	0.24	0.10		mg/L	1	9/20/2018 4:06:13 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 4:06:13 PM	R54332
Sulfate	140	10		mg/L	20	9/20/2018 4:19:05 PM	R54332
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1000	5.0		µmhos/c	1	9/21/2018 2:10:21 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	435.9	20.00		mg/L Ca	1	9/21/2018 2:10:21 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 2:10:21 AM	R54350
Total Alkalinity (as CaCO3)	435.9	20.00		mg/L Ca	1	9/21/2018 2:10:21 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	690	200	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.69		H	pH units	1	9/21/2018 2:10:21 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	160	10		mg/L	10	10/5/2018 1:40:35 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 1:38:30 AM	B54658
Magnesium	16	1.0		mg/L	1	10/5/2018 1:38:30 AM	B54658
Potassium	1.9	1.0		mg/L	1	10/5/2018 1:38:30 AM	B54658
Sodium	67	1.0		mg/L	1	10/5/2018 1:38:30 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #5
Project: GCU 170
Collection Date: 9/19/2018 8:30:00 AM
Lab ID: 1809B78-004
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	970	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9993	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.29	0.10		mg/L	1	9/20/2018 4:31:57 PM	R54332
Chloride	7.3	0.50		mg/L	1	9/20/2018 4:31:57 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 4:31:57 PM	R54332
Bromide	0.14	0.10		mg/L	1	9/20/2018 4:31:57 PM	R54332
Nitrogen, Nitrate (As N)	1.4	0.10		mg/L	1	9/20/2018 4:31:57 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 4:31:57 PM	R54332
Sulfate	910	25	*	mg/L	50	10/2/2018 8:34:15 PM	R54600
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	2100	5.0		µmhos/c	1	9/21/2018 2:32:46 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	278.0	20.00		mg/L Ca	1	9/21/2018 2:32:46 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 2:32:46 AM	R54350
Total Alkalinity (as CaCO3)	278.0	20.00		mg/L Ca	1	9/21/2018 2:32:46 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1610	200	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.95		H	pH units	1	9/21/2018 2:32:46 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	300	5.0		mg/L	5	10/5/2018 1:45:01 AM	B54658
Iron	0.026	0.020		mg/L	1	10/5/2018 1:42:49 AM	B54658
Magnesium	53	1.0		mg/L	1	10/5/2018 1:42:49 AM	B54658
Potassium	4.8	1.0		mg/L	1	10/5/2018 1:42:49 AM	B54658
Sodium	95	1.0		mg/L	1	10/5/2018 1:42:49 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #6
Project: GCU 170
Collection Date: 9/19/2018 7:52:00 AM
Lab ID: 1809B78-005
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	580	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9973	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	ND	0.10		mg/L	1	9/20/2018 4:57:39 PM	R54332
Chloride	16	0.50		mg/L	1	9/20/2018 4:57:39 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 4:57:39 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 4:57:39 PM	R54332
Nitrogen, Nitrate (As N)	0.10	0.10		mg/L	1	9/20/2018 4:57:39 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 4:57:39 PM	R54332
Sulfate	130	10		mg/L	20	9/20/2018 5:10:31 PM	R54332
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1200	5.0		µmhos/c	1	9/21/2018 2:48:26 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	498.6	20.00		mg/L Ca	1	9/21/2018 2:48:26 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 2:48:26 AM	R54350
Total Alkalinity (as CaCO3)	498.6	20.00		mg/L Ca	1	9/21/2018 2:48:26 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	780	200	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.67		H	pH units	1	9/21/2018 2:48:26 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	200	10		mg/L	10	10/5/2018 1:49:28 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 1:47:20 AM	B54658
Magnesium	20	1.0		mg/L	1	10/5/2018 1:47:20 AM	B54658
Potassium	ND	1.0		mg/L	1	10/5/2018 1:47:20 AM	B54658
Sodium	51	1.0		mg/L	1	10/5/2018 1:47:20 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #7
Project: GCU 170
Collection Date: 9/19/2018 9:48:00 AM
Lab ID: 1809B78-006
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	720	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9981	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.22	0.10		mg/L	1	9/20/2018 5:49:07 PM	R54332
Chloride	6.9	0.50		mg/L	1	9/20/2018 5:49:07 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 5:49:07 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 5:49:07 PM	R54332
Nitrogen, Nitrate (As N)	0.47	0.10		mg/L	1	9/20/2018 5:49:07 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 5:49:07 PM	R54332
Sulfate	500	10	*	mg/L	20	9/20/2018 6:01:59 PM	R54332
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1500	5.0		µmhos/c	1	9/21/2018 3:12:28 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	336.6	20.00		mg/L Ca	1	9/21/2018 3:12:28 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 3:12:28 AM	R54350
Total Alkalinity (as CaCO3)	336.6	20.00		mg/L Ca	1	9/21/2018 3:12:28 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1100	40.0	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.66		H	pH units	1	9/21/2018 3:12:28 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	250	10		mg/L	10	10/5/2018 2:00:32 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 1:58:16 AM	B54658
Magnesium	21	1.0		mg/L	1	10/5/2018 1:58:16 AM	B54658
Potassium	2.2	1.0		mg/L	1	10/5/2018 1:58:16 AM	B54658
Sodium	65	1.0		mg/L	1	10/5/2018 1:58:16 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #8
Project: GCU 170
Collection Date: 9/19/2018 8:48:00 AM
Lab ID: 1809B78-007
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	970	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9984	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.21	0.10		mg/L	1	9/20/2018 6:14:51 PM	R54332
Chloride	15	0.50		mg/L	1	9/20/2018 6:14:51 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 6:14:51 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 6:14:51 PM	R54332
Nitrogen, Nitrate (As N)	1.2	0.10		mg/L	1	9/20/2018 6:14:51 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	9/20/2018 6:27:43 PM	R54332
Sulfate	910	25	*	mg/L	50	10/2/2018 8:47:06 PM	R54600
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	2100	5.0		µmhos/c	1	9/21/2018 3:30:16 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	278.0	20.00		mg/L Ca	1	9/21/2018 3:30:16 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 3:30:16 AM	R54350
Total Alkalinity (as CaCO3)	278.0	20.00		mg/L Ca	1	9/21/2018 3:30:16 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1650	200	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	8.10		H	pH units	1	9/21/2018 3:30:16 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	350	10		mg/L	10	10/5/2018 2:04:59 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 2:02:45 AM	B54658
Magnesium	25	1.0		mg/L	1	10/5/2018 2:02:45 AM	B54658
Potassium	4.3	1.0		mg/L	1	10/5/2018 2:02:45 AM	B54658
Sodium	120	10		mg/L	10	10/5/2018 2:04:59 AM	B54658

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: Blagg Engineering
Client Sample ID: MW #9
Project: GCU 170
Collection Date: 9/19/2018 8:09:00 AM
Lab ID: 1809B78-008
Matrix: AQUEOUS
Received Date: 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **pmf**	
Hardness (As CaCO3)	450	6.6		mg/L	1	10/4/2018	R54658
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9969	0			1	9/27/2018 2:36:00 PM	R54507
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	0.38	0.10		mg/L	1	9/20/2018 6:40:34 PM	R54332
Chloride	22	10		mg/L	20	9/20/2018 6:53:27 PM	R54332
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/20/2018 6:40:34 PM	R54332
Bromide	ND	0.10		mg/L	1	9/20/2018 6:40:34 PM	R54332
Nitrogen, Nitrate (As N)	0.54	0.10		mg/L	1	9/20/2018 6:40:34 PM	R54332
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/20/2018 6:40:34 PM	R54332
Sulfate	150	10		mg/L	20	9/20/2018 6:53:27 PM	R54332
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1100	5.0		µmhos/c	1	9/21/2018 3:53:31 AM	R54350
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	386.1	20.00		mg/L Ca	1	9/21/2018 3:53:31 AM	R54350
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	9/21/2018 3:53:31 AM	R54350
Total Alkalinity (as CaCO3)	386.1	20.00		mg/L Ca	1	9/21/2018 3:53:31 AM	R54350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	700	100	*D	mg/L	1	9/26/2018 4:10:00 PM	40569
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.91		H	pH units	1	9/21/2018 3:53:31 AM	R54350
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Calcium	160	10		mg/L	10	10/5/2018 2:09:19 AM	B54658
Iron	ND	0.020		mg/L	1	10/5/2018 2:07:12 AM	B54658
Magnesium	16	1.0		mg/L	1	10/5/2018 2:07:12 AM	B54658
Potassium	1.8	1.0		mg/L	1	10/5/2018 2:07:12 AM	B54658
Sodium	60	1.0		mg/L	1	10/5/2018 2:07:12 AM	B54658

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#: **1809B78**

22-Oct-18

Client: Blagg Engineering
Project: GCU 170

Sample ID	**MB-B**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**B54658**	RunNo:	**54658**					
Prep Date:		Analysis Date:	**10/5/2018**	SeqNo:	**1813488**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	**LCS-B**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**B54658**	RunNo:	**54658**					
Prep Date:		Analysis Date:	**10/5/2018**	SeqNo:	**1813490**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.4	85	115			
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Magnesium	52	1.0	50.00	0	105	85	115			
Potassium	52	1.0	50.00	0	103	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical 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#: **1809B78**

22-Oct-18

Client: Blagg Engineering
Project: GCU 170

Sample ID **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R54332**	RunNo: **54332**
Prep Date:	Analysis Date: **9/20/2018**	SeqNo: **1798339** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R54332**	RunNo: **54332**
Prep Date:	Analysis Date: **9/20/2018**	SeqNo: **1798340** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.5	90	110			
Bromide	2.4	0.10	2.500	0	95.3	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.7	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.8	90	110			
Sulfate	9.4	0.50	10.00	0	93.8	90	110			

Sample ID **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R54600**	RunNo: **54600**
Prep Date:	Analysis Date: **10/2/2018**	SeqNo: **1811003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R54600**	RunNo: **54600**
Prep Date:	Analysis Date: **10/2/2018**	SeqNo: **1811004** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.3	0.50	10.00	0	93.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical 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#: **1809B78**

22-Oct-18

Client: Blagg Engineering

Project: GCU 170

Sample ID	**lcs-1 98.6uS eC**	SampType:	**LCS**	TestCode:	**SM2510B: Specific Conductance**					
Client ID:	**LCSW**	Batch ID:	**R54350**	RunNo:	**54350**					
Prep Date:		Analysis Date:	**9/20/2018**	SeqNo:	**1799195**	Units:	**µmhos/cm**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity		100	5.0	98.60	0	106	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical 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#: **1809B78**

22-Oct-18

Client: Blagg Engineering

Project: GCU 170

Sample ID	**mb-1 alk**	SampType:	**MBLK**		TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R54350**		RunNo:	**54350**					
Prep Date:		Analysis Date:	**9/20/2018**		SeqNo:	**1799136**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20.00									

Sample ID	**lcs-1 alk**	SampType:	**LCS**		TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R54350**		RunNo:	**54350**					
Prep Date:		Analysis Date:	**9/20/2018**		SeqNo:	**1799138**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	76.72	20.00	80.00	0	95.9	90	110				

Sample ID	**mb-2 alk**	SampType:	**MBLK**		TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R54350**		RunNo:	**54350**					
Prep Date:		Analysis Date:	**9/20/2018**		SeqNo:	**1799166**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20.00									

Sample ID	**lcs-2 alk**	SampType:	**LCS**		TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R54350**		RunNo:	**54350**					
Prep Date:		Analysis Date:	**9/20/2018**		SeqNo:	**1799168**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	78.20	20.00	80.00	0	97.7	90	110				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical 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#: **1809B78**

22-Oct-18

Client: Blagg Engineering
Project: GCU 170

Sample ID	**MB-40569**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**40569**	RunNo:	**54437**					
Prep Date:	**9/25/2018**	Analysis Date:	**9/26/2018**	SeqNo:	**1803885**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-40569**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**40569**	RunNo:	**54437**					
Prep Date:	**9/25/2018**	Analysis Date:	**9/26/2018**	SeqNo:	**1803886**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	995	20.0	1000	0	99.5	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical 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

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: **BLAGG** Work Order Number: **1809B78** RcptNo: **1**

Received By: **Jazzmine Burkhead** **9/20/2018 8:30:00 AM**

Completed By: **Ashley Gallegos** **9/20/2018 10:29:38 AM**

Reviewed By: 09/20/18 Labeled by: JG 9.20.18

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 ☐	See remarks No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 8

(<2 or >12 unless noted)

Adjusted? YES

Checked by: JG 9.20.18

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: 1 and Filtered @ 09/20/18

For metals analysis: poured off approx 125mL and added approx 0.4mL HNO3 to 001B-008B for acceptable pH, held for 24 hours prior to analysis

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good	Yes			
2	2.2	Good	Yes			
3	1.7	Good	Yes			

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: GCU # 170

Project #:

Project Manager: JEFFREY C. BLAGG

Sampler: JEFFREY C. BLAGG

On Ice: ☑ Yes ☐ No

Sample Temperature: See remarks

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1809878	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	Total Dissolved Solids	8260B (VOA)	8270 (Semi-VOA)	API Water + pH / TDS / Anions / Cations		Grab sample	5 pt. composite sample
9/19/18	0915	WATER	MW # 2A	1,000 ml - 1	Cool	-001												✓		✓	
9/19/18	0932	WATER	MW # 3A	1,000 ml - 1	Cool	-002												✓		✓	
9/19/18	0903	WATER	MW # 4A	1,000 ml - 1	Cool	-003												✓		✓	
9/19/18	0830	WATER	MW # 5	1,000 ml - 1	Cool	-004												✓		✓	
9/19/18	0752	WATER	MW # 6	1,000 ml - 1	Cool	-005												✓		✓	
9/19/18	0948	WATER	MW # 7	1,000 ml - 1	Cool	-006												✓		✓	
9/19/18	0848	WATER	MW # 8	1,000 ml - 1	Cool	-007												✓		✓	
9/19/18	0809	WATER	MW # 9	1,000 ml - 1	Cool	-008												✓		✓	

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/19/2018	1610	Jeff Blagg	Christine Walters	9/19/18	1640
9/19/18	1840	Christine Walters	Tonni Bruckhead	09/20/18	08:30

Remarks: ***Report only TDS & sulfate.***

BILL BP DIRECTLY: Attn.: Steve Moskal

Use PO provided by BP. WBS #: L1-001CV-E:GCU170

Cooler #3 - 2.6 = 1.

Cooler #1 - 5.8 - 0.1 = 5.9 Cooler #2 - 3.1 - 0.1 = 3.0

Cowier

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

July 10, 2019

Steven Moskal

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX: (505) 632-3903

RE: GCU 170 OrderNo.: 1906E26

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 8 sample(s) on 6/26/2019 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #2A
Project: GCU 170
Collection Date: 6/25/2019 9:15:00 AM
Lab ID: 1906E26-001
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	620	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9997	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	8.6	5.0		mg/L	10	6/30/2019 3:28:59 PM	R61062
Sulfate	350	5.0	*	mg/L	10	6/30/2019 3:28:59 PM	R61062
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1300	5.0		µmhos/c	1	7/1/2019 12:09:38 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	435.7	20.00		mg/L Ca	1	7/1/2019 12:09:38 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 12:09:38 PM	R61065
Total Alkalinity (as CaCO3)	435.7	20.00		mg/L Ca	1	7/1/2019 12:09:38 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	940	40.0	*D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.27		H	pH units	1	7/1/2019 12:09:38 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	210	5.0		mg/L	5	6/30/2019 12:29:19 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 12:27:08 PM	A61067
Magnesium	22	1.0		mg/L	1	6/30/2019 12:27:08 PM	A61067
Potassium	1.9	1.0		mg/L	1	6/30/2019 12:27:08 PM	A61067
Sodium	70	1.0		mg/L	1	6/30/2019 12:27:08 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #3A
Project: GCU 170
Collection Date: 6/25/2019 9:49:00 AM
Lab ID: 1906E26-002
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	980	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9994	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	8.0	5.0		mg/L	10	6/30/2019 3:53:40 PM	R61062
Sulfate	790	50	*	mg/L	100	6/30/2019 4:06:01 PM	R61062
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1800	5.0		µmhos/c	1	7/1/2019 12:28:51 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	263.0	20.00		mg/L Ca	1	7/1/2019 12:28:51 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 12:28:51 PM	R61065
Total Alkalinity (as CaCO3)	263.0	20.00		mg/L Ca	1	7/1/2019 12:28:51 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	1550	40.0	*D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.30		H	pH units	1	7/1/2019 12:28:51 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	330	5.0		mg/L	5	6/30/2019 12:33:58 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 12:31:40 PM	A61067
Magnesium	37	1.0		mg/L	1	6/30/2019 12:31:40 PM	A61067
Potassium	3.4	1.0		mg/L	1	6/30/2019 12:31:40 PM	A61067
Sodium	69	1.0		mg/L	1	6/30/2019 12:31:40 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #4A
Project: GCU 170
Collection Date: 6/25/2019 8:51:00 AM
Lab ID: 1906E26-003 **Matrix:** AQUEOUS **Received Date:** 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	440	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9991	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	10	5.0		mg/L	10	6/30/2019 4:18:21 PM	R61062
Sulfate	140	5.0		mg/L	10	6/30/2019 4:18:21 PM	R61062
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1100	5.0		µmhos/c	1	7/1/2019 12:54:54 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	428.4	20.00		mg/L Ca	1	7/1/2019 12:54:54 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 12:54:54 PM	R61065
Total Alkalinity (as CaCO3)	428.4	20.00		mg/L Ca	1	7/1/2019 12:54:54 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	185	100	D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.41		H	pH units	1	7/1/2019 12:54:54 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	150	5.0		mg/L	5	6/30/2019 12:38:30 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 12:36:19 PM	A61067
Magnesium	16	1.0		mg/L	1	6/30/2019 12:36:19 PM	A61067
Potassium	1.9	1.0		mg/L	1	6/30/2019 12:36:19 PM	A61067
Sodium	71	1.0		mg/L	1	6/30/2019 12:36:19 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #5
Project: GCU 170
Collection Date: 6/25/2019 10:23:00 AM
Lab ID: 1906E26-004
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	1200	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.004	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	8.3	5.0		mg/L	10	7/2/2019 1:31:31 PM	R61119
Sulfate	1100	50	*	mg/L	100	7/2/2019 1:44:22 PM	R61119
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	2200	5.0		µmhos/c	1	7/1/2019 1:13:42 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	232.5	20.00		mg/L Ca	1	7/1/2019 1:13:42 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 1:13:42 PM	R61065
Total Alkalinity (as CaCO3)	232.5	20.00		mg/L Ca	1	7/1/2019 1:13:42 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	1610	100	*D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.37		H	pH units	1	7/1/2019 1:13:42 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	380	5.0		mg/L	5	6/30/2019 12:43:08 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 12:40:51 PM	A61067
Magnesium	51	1.0		mg/L	1	6/30/2019 12:40:51 PM	A61067
Potassium	4.2	1.0		mg/L	1	6/30/2019 12:40:51 PM	A61067
Sodium	100	5.0		mg/L	5	6/30/2019 12:43:08 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #6
Project: GCU 170
Collection Date: 6/25/2019 9:02:00 AM
Lab ID: 1906E26-005
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	420	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	0.9979	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	5.0		mg/L	10	7/2/2019 1:57:13 PM	R61119
Sulfate	72	5.0		mg/L	10	7/2/2019 1:57:13 PM	R61119
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	880	5.0		µmhos/c	1	7/1/2019 1:26:01 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	404.3	20.00		mg/L Ca	1	7/1/2019 1:26:01 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 1:26:01 PM	R61065
Total Alkalinity (as CaCO3)	404.3	20.00		mg/L Ca	1	7/1/2019 1:26:01 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	395	100	D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.42		H	pH units	1	7/1/2019 1:26:01 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	140	5.0		mg/L	5	6/30/2019 12:47:38 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 12:45:28 PM	A61067
Magnesium	15	1.0		mg/L	1	6/30/2019 12:45:28 PM	A61067
Potassium	1.3	1.0		mg/L	1	6/30/2019 12:45:28 PM	A61067
Sodium	34	1.0		mg/L	1	6/30/2019 12:45:28 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #7
Project: GCU 170
Collection Date: 6/25/2019 9:33:00 AM
Lab ID: 1906E26-006
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	950	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.001	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	9.7	5.0		mg/L	10	7/2/2019 2:48:40 PM	R61119
Sulfate	710	50	*	mg/L	100	7/2/2019 3:01:31 PM	R61119
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1800	5.0		µmhos/c	1	7/1/2019 1:44:00 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	268.6	20.00		mg/L Ca	1	7/1/2019 1:44:00 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 1:44:00 PM	R61065
Total Alkalinity (as CaCO3)	268.6	20.00		mg/L Ca	1	7/1/2019 1:44:00 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	1180	100	*D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.34		H	pH units	1	7/1/2019 1:44:00 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	330	5.0		mg/L	5	6/30/2019 12:58:55 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 12:56:35 PM	A61067
Magnesium	28	1.0		mg/L	1	6/30/2019 12:56:35 PM	A61067
Potassium	2.4	1.0		mg/L	1	6/30/2019 12:56:35 PM	A61067
Sodium	72	1.0		mg/L	1	6/30/2019 12:56:35 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #8
Project: GCU 170
Collection Date: 6/25/2019 10:08:00 AM
Lab ID: 1906E26-007
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **bcv**	
Hardness (As CaCO3)	1100	6.6		mg/L	1	7/2/2019 9:03:00 AM	R61090
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.000	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	8.2	5.0		mg/L	10	6/30/2019 4:43:02 PM	R61062
Sulfate	930	50	*	mg/L	100	6/30/2019 4:55:22 PM	R61062
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	2000	5.0		µmhos/c	1	7/1/2019 1:57:44 PM	R61065
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	258.8	20.00		mg/L Ca	1	7/1/2019 1:57:44 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 1:57:44 PM	R61065
Total Alkalinity (as CaCO3)	258.8	20.00		mg/L Ca	1	7/1/2019 1:57:44 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **CJS**	
Total Dissolved Solids	1660	100	*D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.40		H	pH units	1	7/1/2019 1:57:44 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Calcium	400	5.0		mg/L	5	7/1/2019 12:32:32 PM	C61090
Iron	ND	0.020		mg/L	1	6/30/2019 1:01:16 PM	A61067
Magnesium	30	1.0		mg/L	1	6/30/2019 1:01:16 PM	A61067
Potassium	2.9	1.0		mg/L	1	6/30/2019 1:01:16 PM	A61067
Sodium	74	1.0		mg/L	1	6/30/2019 1:01:16 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #9
Project: GCU 170
Collection Date: 6/25/2019 8:40:00 AM
Lab ID: 1906E26-008
Matrix: AQUEOUS
Received Date: 6/26/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst:	**bcv**
Hardness (As CaCO3)	480	6.6		mg/L	1	7/1/2019 9:37:00 AM	R61067
SPECIFIC GRAVITY						Analyst:	**JRR**
Specific Gravity	1.001	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Chloride	23	5.0		mg/L	10	6/30/2019 5:07:43 PM	R61062
Sulfate	220	5.0		mg/L	10	6/30/2019 5:07:43 PM	R61062
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**JRR**
Conductivity	1100	5.0		µmhos/c	1	7/1/2019 2:10:50 PM	R61065
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	367.7	20.00		mg/L Ca	1	7/1/2019 2:10:50 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 2:10:50 PM	R61065
Total Alkalinity (as CaCO3)	367.7	20.00		mg/L Ca	1	7/1/2019 2:10:50 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**CJS**
Total Dissolved Solids	650	40.0	*D	mg/L	1	7/5/2019 2:10:00 PM	45969
SM4500-H+B / 9040C: PH						Analyst:	**JRR**
pH	7.56		H	pH units	1	7/1/2019 2:10:50 PM	R61065
EPA METHOD 200.7: DISSOLVED METALS						Analyst:	**bcv**
Calcium	160	5.0		mg/L	5	6/30/2019 1:08:07 PM	A61067
Iron	ND	0.020		mg/L	1	6/30/2019 1:05:56 PM	A61067
Magnesium	17	1.0		mg/L	1	6/30/2019 1:05:56 PM	A61067
Potassium	1.8	1.0		mg/L	1	6/30/2019 1:05:56 PM	A61067
Sodium	66	1.0		mg/L	1	6/30/2019 1:05:56 PM	A61067

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E26**

10-Jul-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A61067**	RunNo: **61067**
Prep Date:	Analysis Date: **6/30/2019**	SeqNo: **2068043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A61067**	RunNo: **61067**
Prep Date:	Analysis Date: **6/30/2019**	SeqNo: **2068045** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.1	85	115			
Iron	0.49	0.020	0.5000	0	97.9	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Potassium	49	1.0	50.00	0	98.9	85	115			
Sodium	49	1.0	50.00	0	98.5	85	115			

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C61090**	RunNo: **61090**
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2069669** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C61090**	RunNo: **61090**
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2069676** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	51	1.0	50.00	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E26**

10-Jul-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R61062**	RunNo: **61062**
Prep Date:	Analysis Date: **6/30/2019**	SeqNo: **2067935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R61062**	RunNo: **61062**
Prep Date:	Analysis Date: **6/30/2019**	SeqNo: **2067936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.7	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R61119**	RunNo: **61119**
Prep Date:	Analysis Date: **7/2/2019**	SeqNo: **2071016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R61119**	RunNo: **61119**
Prep Date:	Analysis Date: **7/2/2019**	SeqNo: **2071017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.7	90	110			
Sulfate	10	0.50	10.00	0	102	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E26**

10-Jul-19

Client: Blagg Engineering

Project: GCU 170

Sample ID: **lcs-1 99.8uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R61065**	RunNo: **61065**
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2068823** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	99	5.0	99.80	0	99.6	85	115			

Sample ID: **lcs-2 99.8uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R61065**	RunNo: **61065**
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2068863** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.80	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E26**

10-Jul-19

Client: Blagg Engineering

Project: GCU 170

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R61065**	RunNo: **61065**							
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2068770**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R61065**	RunNo: **61065**							
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2068771**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	75.24	20.00	80.00	0	94.1	90	110			

Sample ID: **mb-2 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R61065**	RunNo: **61065**							
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2068793**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-2 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R61065**	RunNo: **61065**							
Prep Date:	Analysis Date: **7/1/2019**	SeqNo: **2068794**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.60	20.00	80.00	0	97.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E26**

10-Jul-19

Client: Blagg Engineering

Project: GCU 170

Sample ID: **MB-45969**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **45969**	RunNo: **61174**
Prep Date: **7/2/2019**	Analysis Date: **7/5/2019**	SeqNo: **2073415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-45969**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **45969**	RunNo: **61174**
Prep Date: **7/2/2019**	Analysis Date: **7/5/2019**	SeqNo: **2073416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: **BLAGG** Work Order Number: **1906E26** RcptNo: **1**

Received By: **Erin Melendrez** **6/26/2019 8:12:00 AM**

Completed By: **Isaiah Ortiz** **6/26/2019 10:40:52 AM**

Reviewed By: ENM 6/26/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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 preserved added to bottles?	Yes ☑	~~No ☑~~ DAD 6/26/19	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 8
(<2 or >12 unless noted)
Adjusted? YES
Checked by: DAD 6/26/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

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

16. Additional remarks: Poured off from provided volume into 125mL metals bottle, filtered samples added approx. 0.4mL HNO3 to samples 001-008 for pH <2.

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Yes			

Chain-of-Custody Record

Client: **BLAGG ENGR. / BP AMERICA**

Mailing Address: **P.O. BOX 87**
BLOOMFIELD, NM 87413

Phone #: **(505) 632-1199**

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name:
GCU # 170

Project #:

Project Manager:
STEVE MOSKAL

Sampler: **JEFFREY C. BLAGG**

On Ice: ☑ Yes ☐ No

Sample Temperature: 5.5+0.1(0=5.6°C

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1906E26	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	Total Dissolved Solids	8260B (VOA)	8270 (Semi-VOA)	API Water + pH / TDS / Anions / Cations		Grab sample	5 pt. composite sample	Air Bubbles (Y or N)
6/25/19	0915	WATER	MW # 2A	1,000 ml - 1	Cool	-001												√		√		
6/25/19	0949	WATER	MW # 3A	1,000 ml - 1	Cool	-002												√		√		
6/25/19	0851	WATER	MW # 4A	1,000 ml - 1	Cool	-003												√		√		
6/25/19	1023	WATER	MW # 5	1,000 ml - 1	Cool	-004												√		√		
6/25/19	0902	WATER	MW # 6	1,000 ml - 1	Cool	-005												√		√		
6/25/19	0933	WATER	MW # 7	1,000 ml - 1	Cool	-006												√		√		
6/25/19	1009	WATER	MW # 8	1,000 ml - 1	Cool	-007												√		√		
6/25/19	0840	WATER	MW # 9	1,000 ml - 1	Cool	-008												√		√		

Date	Time	Relinquished by	Received by	Date	Time
6/25/2019	1655	Jeff Blagg			
6/25/19	1747		courier	6/25/19	1655
				6/26/19	0812

Remarks:
BILL DIRECTLY TO BP:
Contact: Steve Moskal PO to be provided

ENH 6/26/19

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 23, 2019

Steve Moskal

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL:
FAX:

RE: GCU 170 OrderNo.: 1912650

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/12/2019 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #2A
Project: GCU 170
Collection Date: 12/11/2019 9:39:00 AM
Lab ID: 1912650-001 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	0.68	0.50		mg/L	5	12/12/2019 11:32:13 PM	A65151
Chloride	11	2.5		mg/L	5	12/12/2019 11:32:13 PM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/12/2019 11:32:13 PM	A65151
Bromide	ND	0.50		mg/L	5	12/12/2019 11:32:13 PM	A65151
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	12/12/2019 11:32:13 PM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/12/2019 11:32:13 PM	A65151
Sulfate	420	10		mg/L	20	12/12/2019 11:44:38 PM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1500	5.0		µmhos/c	1	12/19/2019 1:56:44 PM	R65313
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	420.8	20.00		mg/L Ca	1	12/17/2019 7:40:42 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 7:40:42 PM	R65231
Total Alkalinity (as CaCO3)	420.8	20.00		mg/L Ca	1	12/17/2019 7:40:42 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **JMT**	
Total Dissolved Solids	1090	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.70		H	pH units	1	12/17/2019 7:40:42 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **rde**	
Calcium	260	10		mg/L	10	12/20/2019 11:59:59 AM	49324
Magnesium	29	1.0		mg/L	1	12/20/2019 11:51:01 AM	49324
Potassium	7.3	1.0		mg/L	1	12/20/2019 11:51:01 AM	49324
Sodium	85	1.0		mg/L	1	12/20/2019 11:51:01 AM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #3A
Project: GCU 170
Collection Date: 12/11/2019 10:14:00 AM
Lab ID: 1912650-002 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	0.65	0.50		mg/L	5	12/12/2019 11:57:03 PM	A65151
Chloride	8.5	2.5		mg/L	5	12/12/2019 11:57:03 PM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/12/2019 11:57:03 PM	A65151
Bromide	ND	0.50		mg/L	5	12/12/2019 11:57:03 PM	A65151
Nitrogen, Nitrate (As N)	0.82	0.50		mg/L	5	12/12/2019 11:57:03 PM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/12/2019 11:57:03 PM	A65151
Sulfate	680	10		mg/L	20	12/13/2019 12:09:27 AM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1600	5.0		µmhos/c	1	12/19/2019 1:59:32 PM	R65313
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	277.3	20.00		mg/L Ca	1	12/17/2019 8:17:41 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 8:17:41 PM	R65231
Total Alkalinity (as CaCO3)	277.3	20.00		mg/L Ca	1	12/17/2019 8:17:41 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **JMT**	
Total Dissolved Solids	1400	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.81		H	pH units	1	12/17/2019 8:17:41 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **rde**	
Calcium	300	10		mg/L	10	12/20/2019 12:08:34 PM	49324
Magnesium	35	1.0		mg/L	1	12/20/2019 12:01:40 PM	49324
Potassium	6.9	1.0		mg/L	1	12/20/2019 12:01:40 PM	49324
Sodium	70	1.0		mg/L	1	12/20/2019 12:01:40 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #4A
Project: GCU 170
Collection Date: 12/11/2019 9:15:00 AM
Lab ID: 1912650-003 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	0.57	0.50		mg/L	5	12/13/2019 12:21:51 AM	A65151
Chloride	79	2.5		mg/L	5	12/13/2019 12:21:51 AM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/13/2019 12:21:51 AM	A65151
Bromide	0.73	0.50		mg/L	5	12/13/2019 12:21:51 AM	A65151
Nitrogen, Nitrate (As N)	1.2	0.50		mg/L	5	12/13/2019 12:21:51 AM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/13/2019 12:21:51 AM	A65151
Sulfate	230	10		mg/L	20	12/13/2019 12:34:15 AM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	1400	5.0		µmhos/c	1	12/19/2019 2:02:21 PM	R65313
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	431.8	20.00		mg/L Ca	1	12/17/2019 8:44:20 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 8:44:20 PM	R65231
Total Alkalinity (as CaCO3)	431.8	20.00		mg/L Ca	1	12/17/2019 8:44:20 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **JMT**	
Total Dissolved Solids	955	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.82		H	pH units	1	12/17/2019 8:44:20 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **rde**	
Calcium	210	10		mg/L	10	12/20/2019 12:10:12 PM	49324
Magnesium	24	1.0		mg/L	1	12/20/2019 12:03:21 PM	49324
Potassium	7.1	1.0		mg/L	1	12/20/2019 12:03:21 PM	49324
Sodium	90	1.0		mg/L	1	12/20/2019 12:03:21 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #5
Project: GCU 170
Collection Date: 12/11/2019 10:54:00 AM
Lab ID: 1912650-004 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	0.68	0.50		mg/L	5	12/13/2019 12:46:39 AM	A65151
Chloride	7.6	2.5		mg/L	5	12/13/2019 12:46:39 AM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/13/2019 12:46:39 AM	A65151
Bromide	ND	0.50		mg/L	5	12/13/2019 12:46:39 AM	A65151
Nitrogen, Nitrate (As N)	0.85	0.50		mg/L	5	12/13/2019 12:46:39 AM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/13/2019 12:46:39 AM	A65151
Sulfate	980	10		mg/L	20	12/13/2019 12:59:04 AM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	2000	5.0		µmhos/c	1	12/19/2019 2:05:10 PM	R65313
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	247.0	20.00		mg/L Ca	1	12/17/2019 9:03:04 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 9:03:04 PM	R65231
Total Alkalinity (as CaCO3)	247.0	20.00		mg/L Ca	1	12/17/2019 9:03:04 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **JMT**	
Total Dissolved Solids	1660	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.87		H	pH units	1	12/17/2019 9:03:04 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **rde**	
Calcium	340	10		mg/L	10	12/20/2019 12:11:53 PM	49324
Magnesium	54	1.0		mg/L	1	12/20/2019 12:05:00 PM	49324
Potassium	11	1.0		mg/L	1	12/20/2019 12:05:00 PM	49324
Sodium	100	1.0		mg/L	1	12/20/2019 12:05:00 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #6
Project: GCU 170
Collection Date: 12/11/2019 9:28:00 AM
Lab ID: 1912650-005 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Fluoride	0.64	0.50		mg/L	5	12/13/2019 1:36:17 AM	A65151
Chloride	4.0	2.5		mg/L	5	12/13/2019 1:36:17 AM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/13/2019 1:36:17 AM	A65151
Bromide	ND	0.50		mg/L	5	12/13/2019 1:36:17 AM	A65151
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	12/13/2019 1:36:17 AM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/13/2019 1:36:17 AM	A65151
Sulfate	75	2.5		mg/L	5	12/13/2019 1:36:17 AM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**JRR**
Conductivity	830	5.0		µmhos/c	1	12/19/2019 2:07:59 PM	R65313
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	382.5	20.00		mg/L Ca	1	12/17/2019 9:15:46 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 9:15:46 PM	R65231
Total Alkalinity (as CaCO3)	382.5	20.00		mg/L Ca	1	12/17/2019 9:15:46 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**JMT**
Total Dissolved Solids	610	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst:	**JRR**
pH	7.83		H	pH units	1	12/17/2019 9:15:46 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**rde**
Calcium	140	10		mg/L	10	12/20/2019 12:28:48 PM	49324
Magnesium	19	1.0		mg/L	1	12/20/2019 12:06:48 PM	49324
Potassium	7.5	1.0		mg/L	1	12/20/2019 12:06:48 PM	49324
Sodium	34	1.0		mg/L	1	12/20/2019 12:06:48 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #7
Project: GCU 170
Collection Date: 12/11/2019 10:04:00 AM
Lab ID: 1912650-006 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Fluoride	0.66	0.50		mg/L	5	12/13/2019 2:01:06 AM	A65151
Chloride	11	2.5		mg/L	5	12/13/2019 2:01:06 AM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/13/2019 2:01:06 AM	A65151
Bromide	ND	0.50		mg/L	5	12/13/2019 2:01:06 AM	A65151
Nitrogen, Nitrate (As N)	0.85	0.50		mg/L	5	12/13/2019 2:01:06 AM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/13/2019 2:01:06 AM	A65151
Sulfate	920	10		mg/L	20	12/13/2019 2:13:31 AM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**JRR**
Conductivity	1900	5.0		µmhos/c	1	12/19/2019 2:16:37 PM	R65313
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	279.0	20.00		mg/L Ca	1	12/17/2019 9:33:20 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 9:33:20 PM	R65231
Total Alkalinity (as CaCO3)	279.0	20.00		mg/L Ca	1	12/17/2019 9:33:20 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**JMT**
Total Dissolved Solids	1670	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst:	**JRR**
pH	7.82		H	pH units	1	12/17/2019 9:33:20 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**rde**
Calcium	370	10		mg/L	10	12/20/2019 12:30:22 PM	49324
Magnesium	34	1.0		mg/L	1	12/20/2019 12:13:34 PM	49324
Potassium	7.0	1.0		mg/L	1	12/20/2019 12:13:34 PM	49324
Sodium	83	1.0		mg/L	1	12/20/2019 12:13:34 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #8
Project: GCU 170
Collection Date: 12/11/2019 10:25:00 AM
Lab ID: 1912650-007
Matrix: AQUEOUS
Received Date: 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Fluoride	0.56	0.50		mg/L	5	12/13/2019 2:25:55 AM	A65151
Chloride	11	2.5		mg/L	5	12/13/2019 2:25:55 AM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/13/2019 2:25:55 AM	A65151
Bromide	ND	0.50		mg/L	5	12/13/2019 2:25:55 AM	A65151
Nitrogen, Nitrate (As N)	1.3	0.50		mg/L	5	12/13/2019 2:25:55 AM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/13/2019 2:25:55 AM	A65151
Sulfate	990	25		mg/L	50	12/16/2019 3:57:53 PM	R65206
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**JRR**
Conductivity	2200	5.0		µmhos/c	1	12/19/2019 2:19:33 PM	R65313
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	235.2	20.00		mg/L Ca	1	12/17/2019 9:46:58 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 9:46:58 PM	R65231
Total Alkalinity (as CaCO3)	235.2	20.00		mg/L Ca	1	12/17/2019 9:46:58 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**JMT**
Total Dissolved Solids	1940	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst:	**JRR**
pH	7.84		H	pH units	1	12/17/2019 9:46:58 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**rde**
Calcium	420	10		mg/L	10	12/20/2019 12:31:59 PM	49324
Magnesium	35	1.0		mg/L	1	12/20/2019 12:15:15 PM	49324
Potassium	7.0	1.0		mg/L	1	12/20/2019 12:15:15 PM	49324
Sodium	110	10		mg/L	10	12/20/2019 12:31:59 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #9
Project: GCU 170
Collection Date: 12/11/2019 9:00:00 AM
Lab ID: 1912650-008 **Matrix:** AQUEOUS **Received Date:** 12/12/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Fluoride	0.52	0.50		mg/L	5	12/13/2019 2:50:45 AM	A65151
Chloride	18	2.5		mg/L	5	12/13/2019 2:50:45 AM	A65151
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	12/13/2019 2:50:45 AM	A65151
Bromide	ND	0.50		mg/L	5	12/13/2019 2:50:45 AM	A65151
Nitrogen, Nitrate (As N)	0.97	0.50		mg/L	5	12/13/2019 2:50:45 AM	A65151
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/13/2019 2:50:45 AM	A65151
Sulfate	500	10		mg/L	20	12/13/2019 3:03:09 AM	A65151
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**JRR**
Conductivity	1500	5.0		µmhos/c	1	12/19/2019 2:22:30 PM	R65313
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	351.3	20.00		mg/L Ca	1	12/17/2019 9:59:16 PM	R65231
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/17/2019 9:59:16 PM	R65231
Total Alkalinity (as CaCO3)	351.3	20.00		mg/L Ca	1	12/17/2019 9:59:16 PM	R65231
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**JMT**
Total Dissolved Solids	1180	100	*D	mg/L	1	12/19/2019 8:01:00 AM	49376
SM4500-H+B / 9040C: PH						Analyst:	**JRR**
pH	7.88		H	pH units	1	12/17/2019 9:59:16 PM	R65231
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**rde**
Calcium	240	10		mg/L	10	12/20/2019 12:33:38 PM	49324
Magnesium	28	1.0		mg/L	1	12/20/2019 12:23:47 PM	49324
Potassium	6.7	1.0		mg/L	1	12/20/2019 12:23:47 PM	49324
Sodium	84	1.0		mg/L	1	12/20/2019 12:23:47 PM	49324

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912650**

23-Dec-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A65151**	RunNo: **65151**
Prep Date:	Analysis Date: **12/12/2019**	SeqNo: **2235818** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A65151**	RunNo: **65151**
Prep Date:	Analysis Date: **12/12/2019**	SeqNo: **2235819** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	105	90	110			
Chloride	4.9	0.50	5.000	0	97.4	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.8	90	110			
Bromide	2.5	0.10	2.500	0	99.2	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	97.9	90	110			
Sulfate	9.8	0.50	10.00	0	98.0	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R65206**	RunNo: **65206**
Prep Date:	Analysis Date: **12/16/2019**	SeqNo: **2238805** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R65206**	RunNo: **65206**
Prep Date:	Analysis Date: **12/16/2019**	SeqNo: **2238806** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.8	0.50	10.00	0	97.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912650**

23-Dec-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **lcs-1 99.9uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R65313**	RunNo: **65313**
Prep Date:	Analysis Date: **12/19/2019**	SeqNo: **2243333** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	98	5.0	99.90	0	98.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912650**

23-Dec-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **MB-49324**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **49324**	RunNo: **65323**
Prep Date: **12/13/2019**	Analysis Date: **12/20/2019**	SeqNo: **2243981** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: **LCS-49324**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **49324**	RunNo: **65323**
Prep Date: **12/13/2019**	Analysis Date: **12/20/2019**	SeqNo: **2243983** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.4	80	120			
Magnesium	49	1.0	50.00	0	97.5	80	120			
Potassium	49	1.0	50.00	0	98.1	80	120			
Sodium	50	1.0	50.00	0	99.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912650**

23-Dec-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **1912650-001a dup** SampType: **dup** TestCode: **SM4500-H+B / 9040C: pH**
Client ID: **MW #2A** Batch ID: **R65231** RunNo: **65231**
Prep Date: Analysis Date: **12/17/2019** SeqNo: **2239921** Units: **pH units**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.70									H

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912650**

23-Dec-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R65231**	RunNo: **65231**							
Prep Date:	Analysis Date: **12/17/2019**	SeqNo: **2239806**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R65231**	RunNo: **65231**							
Prep Date:	Analysis Date: **12/17/2019**	SeqNo: **2239807**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.44	20.00	80.00	0	98.0	90	110			

Sample ID: **mb-2 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R65231**	RunNo: **65231**							
Prep Date:	Analysis Date: **12/17/2019**	SeqNo: **2239829**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-2 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R65231**	RunNo: **65231**							
Prep Date:	Analysis Date: **12/17/2019**	SeqNo: **2239830**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.56	20.00	80.00	0	99.4	90	110			

Sample ID: **1912650-001a dup**	SampType: **dup**	TestCode: **SM2320B: Alkalinity**							
Client ID: **MW #2A**	Batch ID: **R65231**	RunNo: **65231**							
Prep Date:	Analysis Date: **12/17/2019**	SeqNo: **2239840**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	422.1	20.00						0.313	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912650**

23-Dec-19

Client: Blagg Engineering
Project: GCU 170

Sample ID: **MB-49376**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **49376**	RunNo: **65271**
Prep Date: **12/17/2019**	Analysis Date: **12/19/2019**	SeqNo: **2241521** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-49376**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **49376**	RunNo: **65271**
Prep Date: **12/17/2019**	Analysis Date: **12/19/2019**	SeqNo: **2241522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: **BLAGG** Work Order Number: **1912650** RcptNo: **1**

Received By: **Yazmine Garduno** **12/12/2019 8:45:00 AM**

Completed By: **Leah Baca** **12/12/2019 1:05:05 PM**

Reviewed By: DAD 12/12/19

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	HNO3 NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 8
(<2 or >12 unless noted)
Adjusted? YES
Checked by: DAD 12/12/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

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

16. Additional remarks:

Poured off from unpreserved HDPE and preserved with ~0.5mL of HNO3 for pH<2 for Metals analysis on fraction B for all samples. - DAD 12/12/19

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.0	Good				
2	0.2	Good				

Chain-of-Custody Record

Client: BLAGG ENGR. / BPX ENERGY

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: GCU # 170

Project #:

Project Manager: STEVE MOSKAL

Sampler: JEFFREY C. BLAGG

On Ice: ☑ Yes ☐ No

Sample Temperature: Runaway

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1912650	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	Total Dissolved Solids	8260B (VOA)	8270 (Semi-VOA)	API Water + pH / TDS / Anions / Cations		Grab sample	5 pt. composite sample	Air Bubbles (Y or N)
12/11/19	0939	WATER	MW # 2A	1,000 ml - 1	Cool	-001												✓		✓		
12/11/19	1014	WATER	MW # 3A	1,000 ml - 1	Cool	-002												✓		✓		
12/11/19	0915	WATER	MW # 4A	1,000 ml - 1	Cool	-003												✓		✓		
12/11/19	1054	WATER	MW # 5	1,000 ml - 1	Cool	-004												✓		✓		
12/11/19	0928	WATER	MW # 6	1,000 ml - 1	Cool	-005												✓		✓		
12/11/19	1004	WATER	MW # 7	1,000 ml - 1	Cool	-006												✓		✓		
12/11/19	1025	WATER	MW # 8	1,000 ml - 1	Cool	-007												✓		✓		
12/11/19	0900	WATER	MW # 9	1,000 ml - 1	Cool	-008												✓		✓		

Date	Time	Relinquished by:	Received by:	Date	Time
12/11/19	1540	Jeff Blagg	Christine Walters	12/11/19	1546
12/11/19	1804	Christine Walters	via courier	12/12/19	0545

Remarks:
BILL DIRECTLY TO BPX:
Contact: Steve Moskal

0.3 - 0.3 = 0
0.5 - 0.3 = 0.2
PO to be provided

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

April 14, 2020

Steve Moskal

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL:
FAX:

RE: GCU 170 OrderNo.: 2003B89

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 8 sample(s) on 3/26/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2003B89**
Date Reported: **4/14/2020**

CLIENT: Blagg Engineering
Client Sample ID: MW #2A
Project: GCU 170
Collection Date: 3/25/2020 9:36:00 AM
Lab ID: 2003B89-001
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.67	0.50		mg/L	5	3/27/2020 10:08:58 AM	R67645
Chloride	17	2.5		mg/L	5	3/27/2020 10:08:58 AM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 10:08:58 AM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 10:08:58 AM	R67645
Nitrogen, Nitrate (As N)	ND	0.50	H	mg/L	5	3/27/2020 10:08:58 AM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 10:08:58 AM	R67645
Sulfate	490	10	*	mg/L	20	3/27/2020 10:21:22 AM	R67645
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	1600	5.0		µmhos/c	1	3/30/2020 3:56:44 PM	R67685
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	429.7	20.00		mg/L Ca	1	3/30/2020 3:56:44 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 3:56:44 PM	R67685
Total Alkalinity (as CaCO3)	429.7	20.00		mg/L Ca	1	3/30/2020 3:56:44 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	1240	100	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.58		H	pH units	1	4/8/2020 12:22:46 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	280	5.0		mg/L	5	4/1/2020 1:10:19 AM	51438
Magnesium	31	1.0		mg/L	1	4/1/2020 1:04:41 AM	51438
Potassium	3.7	1.0		mg/L	1	4/1/2020 1:04:41 AM	51438
Sodium	110	5.0		mg/L	5	4/1/2020 1:10:19 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #3A
Project: GCU 170
Collection Date: 3/25/2020 9:24:00 AM
Lab ID: 2003B89-002
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.57	0.50		mg/L	5	3/27/2020 10:33:47 AM	R67645
Chloride	11	2.5		mg/L	5	3/27/2020 10:33:47 AM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 10:33:47 AM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 10:33:47 AM	R67645
Nitrogen, Nitrate (As N)	0.85	0.50	H	mg/L	5	3/27/2020 10:33:47 AM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 10:33:47 AM	R67645
Sulfate	820	10	*	mg/L	20	3/27/2020 10:46:12 AM	R67645
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	1800	5.0		µmhos/c	1	3/30/2020 4:15:30 PM	R67685
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	251.1	20.00		mg/L Ca	1	3/30/2020 4:15:30 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 4:15:30 PM	R67685
Total Alkalinity (as CaCO3)	251.1	20.00		mg/L Ca	1	3/30/2020 4:15:30 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	1570	100	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.96		H	pH units	1	4/8/2020 12:26:53 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	390	10		mg/L	10	4/1/2020 1:19:30 AM	51438
Magnesium	39	1.0		mg/L	1	4/1/2020 1:17:40 AM	51438
Potassium	6.0	1.0		mg/L	1	4/1/2020 1:17:40 AM	51438
Sodium	72	1.0		mg/L	1	4/1/2020 1:17:40 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #4A
Project: GCU 170
Collection Date: 3/25/2020 9:13:00 AM
Lab ID: 2003B89-003
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.61	0.50		mg/L	5	3/27/2020 10:58:36 AM	R67645
Chloride	27	2.5		mg/L	5	3/27/2020 10:58:36 AM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 10:58:36 AM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 10:58:36 AM	R67645
Nitrogen, Nitrate (As N)	ND	0.50	H	mg/L	5	3/27/2020 10:58:36 AM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 10:58:36 AM	R67645
Sulfate	190	2.5		mg/L	5	3/27/2020 10:58:36 AM	R67645
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	1100	5.0		µmhos/c	1	3/30/2020 4:28:32 PM	R67685
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	412.2	20.00		mg/L Ca	1	3/30/2020 4:28:32 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 4:28:32 PM	R67685
Total Alkalinity (as CaCO3)	412.2	20.00		mg/L Ca	1	3/30/2020 4:28:32 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	820	200	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.80		H	pH units	1	4/8/2020 12:31:19 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	190	5.0		mg/L	5	4/1/2020 1:29:35 AM	51438
Magnesium	22	1.0		mg/L	1	4/1/2020 1:21:25 AM	51438
Potassium	5.7	1.0		mg/L	1	4/1/2020 1:21:25 AM	51438
Sodium	76	1.0		mg/L	1	4/1/2020 1:21:25 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #5
Project: GCU 170
Collection Date: 3/25/2020 10:02:00 AM
Lab ID: 2003B89-004
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.59	0.50		mg/L	5	3/27/2020 11:48:15 AM	R67645
Chloride	11	2.5		mg/L	5	3/27/2020 11:48:15 AM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 11:48:15 AM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 11:48:15 AM	R67645
Nitrogen, Nitrate (As N)	1.0	0.50	H	mg/L	5	3/27/2020 11:48:15 AM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 11:48:15 AM	R67645
Sulfate	1100	25	*	mg/L	50	3/31/2020 10:15:28 PM	R67745
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	2100	5.0		µmhos/c	1	3/30/2020 4:46:28 PM	R67685
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	236.1	20.00		mg/L Ca	1	3/30/2020 4:46:28 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 4:46:28 PM	R67685
Total Alkalinity (as CaCO3)	236.1	20.00		mg/L Ca	1	3/30/2020 4:46:28 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	1880	200	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.79		H	pH units	1	4/8/2020 12:35:37 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	410	10		mg/L	10	4/1/2020 1:33:23 AM	51438
Magnesium	55	1.0		mg/L	1	4/1/2020 1:31:25 AM	51438
Potassium	8.7	1.0		mg/L	1	4/1/2020 1:31:25 AM	51438
Sodium	110	10		mg/L	10	4/1/2020 1:33:23 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #6
Project: GCU 170
Collection Date: 3/25/2020 9:00:00 AM
Lab ID: 2003B89-005
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.65	0.50		mg/L	5	3/27/2020 12:13:04 PM	R67645
Chloride	4.3	2.5		mg/L	5	3/27/2020 12:13:04 PM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 12:13:04 PM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 12:13:04 PM	R67645
Nitrogen, Nitrate (As N)	ND	0.50	H	mg/L	5	3/27/2020 12:13:04 PM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 12:13:04 PM	R67645
Sulfate	77	2.5		mg/L	5	3/27/2020 12:13:04 PM	R67645
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	800	5.0		µmhos/c	1	3/31/2020 10:15:04 AM	R67720
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	370.6	20.00		mg/L Ca	1	3/30/2020 5:09:16 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 5:09:16 PM	R67685
Total Alkalinity (as CaCO3)	370.6	20.00		mg/L Ca	1	3/30/2020 5:09:16 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	585	100	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.97		H	pH units	1	4/8/2020 12:39:59 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	160	5.0		mg/L	5	4/1/2020 1:40:54 AM	51438
Magnesium	17	1.0		mg/L	1	4/1/2020 1:35:17 AM	51438
Potassium	3.3	1.0		mg/L	1	4/1/2020 1:35:17 AM	51438
Sodium	34	1.0		mg/L	1	4/1/2020 1:35:17 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #7
Project: GCU 170
Collection Date: 3/25/2020 9:50:00 AM
Lab ID: 2003B89-006
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.60	0.50		mg/L	5	3/27/2020 12:37:53 PM	R67645
Chloride	8.6	2.5		mg/L	5	3/27/2020 12:37:53 PM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 12:37:53 PM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 12:37:53 PM	R67645
Nitrogen, Nitrate (As N)	1.5	0.50	H	mg/L	5	3/27/2020 12:37:53 PM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 12:37:53 PM	R67645
Sulfate	940	10	*	mg/L	20	3/27/2020 12:50:17 PM	R67645
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	1900	5.0		µmhos/c	1	3/31/2020 10:18:05 AM	R67720
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	268.8	20.00		mg/L Ca	1	3/30/2020 5:26:10 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 5:26:10 PM	R67685
Total Alkalinity (as CaCO3)	268.8	20.00		mg/L Ca	1	3/30/2020 5:26:10 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	1680	100	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.95		H	pH units	1	4/8/2020 12:44:24 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	420	10		mg/L	10	4/1/2020 1:56:25 AM	51438
Magnesium	32	1.0		mg/L	1	4/1/2020 1:54:32 AM	51438
Potassium	4.4	1.0		mg/L	1	4/1/2020 1:54:32 AM	51438
Sodium	85	1.0		mg/L	1	4/1/2020 1:54:32 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #8
Project: GCU 170
Collection Date: 3/25/2020 10:16:00 AM
Lab ID: 2003B89-007
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	0.53	0.50		mg/L	5	3/27/2020 1:02:41 PM	R67645
Chloride	8.9	2.5		mg/L	5	3/27/2020 1:02:41 PM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 1:02:41 PM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 1:02:41 PM	R67645
Nitrogen, Nitrate (As N)	0.97	0.50	H	mg/L	5	3/27/2020 1:02:41 PM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 1:02:41 PM	R67645
Sulfate	1200	25	*	mg/L	50	3/31/2020 10:28:21 PM	R67745
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	2100	5.0		µmhos/c	1	3/31/2020 10:21:05 AM	R67720
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	232.8	20.00		mg/L Ca	1	3/30/2020 5:39:44 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 5:39:44 PM	R67685
Total Alkalinity (as CaCO3)	232.8	20.00		mg/L Ca	1	3/30/2020 5:39:44 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	1970	100	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.97		H	pH units	1	4/8/2020 12:48:41 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	450	10		mg/L	10	4/1/2020 2:00:19 AM	51438
Magnesium	40	1.0		mg/L	1	4/1/2020 1:58:26 AM	51438
Potassium	5.0	1.0		mg/L	1	4/1/2020 1:58:26 AM	51438
Sodium	93	1.0		mg/L	1	4/1/2020 1:58:26 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #9
Project: GCU 170
Collection Date: 3/25/2020 8:47:00 AM
Lab ID: 2003B89-008
Matrix: AQUEOUS
Received Date: 3/26/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	ND	0.50		mg/L	5	3/27/2020 1:27:31 PM	R67645
Chloride	31	2.5		mg/L	5	3/27/2020 1:27:31 PM	R67645
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	3/27/2020 1:27:31 PM	R67645
Bromide	ND	0.50		mg/L	5	3/27/2020 1:27:31 PM	R67645
Nitrogen, Nitrate (As N)	0.56	0.50	H	mg/L	5	3/27/2020 1:27:31 PM	R67645
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	3/27/2020 1:27:31 PM	R67645
Sulfate	460	10	*	mg/L	20	3/27/2020 1:39:55 PM	R67645
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**vfs**
Conductivity	1500	5.0		µmhos/c	1	3/31/2020 10:24:06 AM	R67720
SM2320B: ALKALINITY						Analyst:	**vfs**
Bicarbonate (As CaCO3)	353.2	20.00		mg/L Ca	1	3/30/2020 5:52:21 PM	R67685
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	3/30/2020 5:52:21 PM	R67685
Total Alkalinity (as CaCO3)	353.2	20.00		mg/L Ca	1	3/30/2020 5:52:21 PM	R67685
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	1060	200	*D	mg/L	1	4/3/2020 3:37:00 PM	51480
SM4500-H+B / 9040C: PH						Analyst:	**vfs**
pH	7.91		H	pH units	1	4/8/2020 12:53:01 PM	R67969
EPA METHOD 200.7: METALS						Analyst:	**pmf**
Calcium	270	5.0		mg/L	5	4/1/2020 2:04:16 AM	51438
Magnesium	29	1.0		mg/L	1	4/1/2020 2:02:20 AM	51438
Potassium	5.1	1.0		mg/L	1	4/1/2020 2:02:20 AM	51438
Sodium	87	1.0		mg/L	1	4/1/2020 2:02:20 AM	51438

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **MB-51438**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **51438**	RunNo: **67740**
Prep Date: **3/31/2020**	Analysis Date: **4/1/2020**	SeqNo: **2338593** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: **LLLCS-51438**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **51438**	RunNo: **67740**
Prep Date: **3/31/2020**	Analysis Date: **4/1/2020**	SeqNo: **2338595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	105	50	150			
Magnesium	ND	1.0	0.5000	0	103	50	150			
Potassium	ND	1.0	0.5000	0	107	50	150			
Sodium	ND	1.0	0.5000	0	76.4	50	150			

Sample ID: **LCS-51438**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **51438**	RunNo: **67740**
Prep Date: **3/31/2020**	Analysis Date: **4/1/2020**	SeqNo: **2338597** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	52	1.0	50.00	0	105	85	115			
Magnesium	52	1.0	50.00	0	104	85	115			
Potassium	51	1.0	50.00	0	102	85	115			
Sodium	51	1.0	50.00	0	103	85	115			

Sample ID: **2003B89-001BMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MW #2A**	Batch ID: **51438**	RunNo: **67740**
Prep Date: **3/31/2020**	Analysis Date: **4/1/2020**	SeqNo: **2338617** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	83	1.0	50.00	31.34	104	70	130			
Potassium	57	1.0	50.00	3.704	107	70	130			

Sample ID: **2003B89-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MW #2A**	Batch ID: **51438**	RunNo: **67740**
Prep Date: **3/31/2020**	Analysis Date: **4/1/2020**	SeqNo: **2338618** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	82	1.0	50.00	31.34	102	70	130	1.14	20	
Potassium	56	1.0	50.00	3.704	106	70	130	1.42	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **2003B89-001BMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **MW #2A** Batch ID: **51438** RunNo: **67740**

Prep Date: **3/31/2020** Analysis Date: **4/1/2020** SeqNo: **2338620** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	320	5.0	50.00	280.8	82.2	70	130			
Sodium	150	5.0	50.00	106.2	95.3	70	130			

Sample ID: **2003B89-001BMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **MW #2A** Batch ID: **51438** RunNo: **67740**

Prep Date: **3/31/2020** Analysis Date: **4/1/2020** SeqNo: **2338621** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	330	5.0	50.00	280.8	92.4	70	130	1.57	20	
Sodium	150	5.0	50.00	106.2	97.0	70	130	0.574	20	

Sample ID: **2003B89-005BMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **MW #6** Batch ID: **51438** RunNo: **67740**

Prep Date: **3/31/2020** Analysis Date: **4/1/2020** SeqNo: **2338633** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	67	1.0	50.00	17.02	99.5	70	130			
Potassium	54	1.0	50.00	3.349	101	70	130			
Sodium	84	1.0	50.00	33.95	99.5	70	130			

Sample ID: **2003B89-005BMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **MW #6** Batch ID: **51438** RunNo: **67740**

Prep Date: **3/31/2020** Analysis Date: **4/1/2020** SeqNo: **2338634** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	68	1.0	50.00	17.02	102	70	130	1.74	20	
Potassium	54	1.0	50.00	3.349	101	70	130	0.0351	20	
Sodium	83	1.0	50.00	33.95	98.5	70	130	0.584	20	

Sample ID: **2003B89-005BMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **MW #6** Batch ID: **51438** RunNo: **67740**

Prep Date: **3/31/2020** Analysis Date: **4/1/2020** SeqNo: **2338636** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	200	5.0	50.00	155.8	81.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **2003B89-005BMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MW #6**	Batch ID: **51438**	RunNo: **67740**
Prep Date: **3/31/2020**	Analysis Date: **4/1/2020**	SeqNo: **2338637** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	200	5.0	50.00	155.8	85.2	70	130	1.00	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R67645**	RunNo: **67645**
Prep Date:	Analysis Date: **3/27/2020**	SeqNo: **2335407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R67645**	RunNo: **67645**
Prep Date:	Analysis Date: **3/27/2020**	SeqNo: **2335408** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	110	90	110			
Chloride	4.9	0.50	5.000	0	97.3	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	98.9	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	99.8	90	110			
Sulfate	10	0.50	10.00	0	99.8	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R67745**	RunNo: **67745**
Prep Date:	Analysis Date: **3/31/2020**	SeqNo: **2339345** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R67745**	RunNo: **67745**
Prep Date:	Analysis Date: **3/31/2020**	SeqNo: **2339346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.8	0.50	10.00	0	98.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **lcs-1 99.9uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R67685**	RunNo: **67685**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337780** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.90	0	101	85	115			

Sample ID: **lcs-1 99.9uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R67720**	RunNo: **67720**
Prep Date:	Analysis Date: **3/31/2020**	SeqNo: **2337973** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.90	0	99.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R67685**	RunNo: **67685**							
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337802**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R67685**	RunNo: **67685**							
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337803**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.20	20.00	80.00	0	96.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003B89**

14-Apr-20

Client: Blagg Engineering

Project: GCU 170

Sample ID: **MB-51480**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **51480**	RunNo: **67826**
Prep Date: **4/1/2020**	Analysis Date: **4/3/2020**	SeqNo: **2342610** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-51480**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **51480**	RunNo: **67826**
Prep Date: **4/1/2020**	Analysis Date: **4/3/2020**	SeqNo: **2342611** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: **BLAGG** Work Order Number: **2003B89** RcptNo: **1**

Received By: **Isaiah Ortiz** **3/26/2020 7:50:00 AM** I_Ox

Completed By: **Leah Baca** **3/26/2020 3:32:08 PM** Leah Baca

Reviewed By: JO 3/27/20 JO

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	HNO3 NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 8
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	(<2 or >12 unless noted)
13. Is it clear what analyses were requested?	Yes ☑	No ☐	Adjusted? yes
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: DAD 3/27/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

Added ~1.0 mL of HNO3 to all samples in B fraction for metals analysis - DAD 3/27/20

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good				
2	1.2	Good				

Chain-of-Custody Record

Client: BLAGG ENGR. / BPX ENERGY

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: GCU # 170

Project #:

Project Manager: STEVE MOSKAL

Sampler: JEFFREY C. BLAGG

On Ice: ☑ Yes ☐ No

Sample Temperature: 3.1 - 0 = 3.1

1.2 - 0 = 1.2

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. 2003B89	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	Total Dissolved Solids	8260B (VOA)	8270 (Semi-VOA)	API Water + pH / TDS / Anions / Cations		Grab sample	5 pt. composite sample	Air Bubbles (Y or N)
3/24/20	9:36	WATER	MW # 2A	1,000 ml - 1	Cool	-001												√		√		
3/24/20	9:24	WATER	MW # 3A	1,000 ml - 1	Cool	-002												√		√		
3/24/20	9:13	WATER	MW # 4A	1,000 ml - 1	Cool	-003												√		√		
3/24/20	10:02	WATER	MW # 5	1,000 ml - 1	Cool	-004												√		√		
3/24/20	9:00	WATER	MW # 6	1,000 ml - 1	Cool	-005												√		√		
3/24/20	9:50	WATER	MW # 7	1,000 ml - 1	Cool	-006												√		√		
3/24/20	10:16	WATER	MW # 8	1,000 ml - 1	Cool	-007												√		√		
3/24/20	8:47	WATER	MW # 9	1,000 ml - 1	Cool	-008												√		√		

Analysis Request

Date	Time	Relinquished by	Received by	Date	Time
3/25/2020	1441	Jeff Blagg	Christin Wallace	3/25/20	1441
3/25/20	1811	Christin Wallace		3/26/20	0750

Remarks:
BILL DIRECTLY TO BPX:
Contact: Steve Moskal
PO to be provided

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.