GTHT - _____1_____

ANNUAL REPORTS

2013

Cyrq

Lightning Dock
geothermal

Annual
Water Quality Monitoring Program
Report

Annual Geothermal Well Report

Owner/Operator:
Lightning Dock Geothermal HI-01, LLC (a subsidiary of Cyrq Energy, Inc.)

Discharge Permit GTHT-001

Submitted by:

Nick Goodman
CEO of Cyrq Energy, Inc.
136 South Main Street, Ste. 600
Salt Lake City, UT 84101

31 January 2014

Mr. Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

January 30, 2014

RE: Lightning Dock Geothermal HI-01, 2013 Annual Water Quality Monitoring Program Report and 2103 Annual Geothermal Well Report for Lightning Dock Geothermal HI-01, Hidalgo County, New Mexico

Dear Mr. Chavez,

Pursuant to the July 1, 2009 Discharge Permit ("D.P.") for Los Lobos' Lightning Dock Geothermal Project, pages 11-12, ¶20(F), and pages 16-17, ¶21(P), Lightning Dock Geothermal HI-01, LLC (formerly Los Lobos Renewable Power, LLC) herein submits the following:

- 2013 Annual Water Quality Monitoring Program Report
- 2103 Annual Geothermal Well Report

Power plant startup occurred on December 20, 2013. Thus, the 2013 Annual Reports reflect a situation where the monitoring programs have just been established and the geothermal wells have just been placed on production and injection. These documents therefore reflect only the water quality information collected from groundwater monitoring wells in November and December of 2013 and all of the historic and recent water quality information collected from the production or injection wells.

Two copies of each document are enclosed. Please forward one copy to Mr. Dawson in your Santa Fe office or to Mr. Dade in OCD's Artesia office. Thank you very much for your assistance in the development of this important energy project. Should you have questions regarding these reports, please do not hesitate to contact me by email at David.Janney@amec.com or by phone at (505) 821-1801.

Respectfully submitted,

David W. Janney

David W. Janney, PG
Agent for Lightning Dock Geothermal HI 01, LLC

Cc: Mr. Nick Goodman, Lightning Dock Geothermal HI 01, LLC
Mr. Chuck Smiley, Lightning Dock Geothermal HI 01, LLC
Ms. Michelle Henrie, Attorney for Lightning Dock Geothermal HI 01, LLC

AMEC Environment & Infrastructure, Inc.
8519 Jefferson, NE
Albuquerque, New Mexico 87113
(505) 821-1801
www.amec.com

Cyrq

Lightning Dock
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Water Quality Monitoring Program
Report

Annual Geothermal Well Report

Owner/Operator:
Lightning Dock Geothermal HI-01, LLC (a subsidiary of Cyrq Energy, Inc.)

Discharge Permit GTHT-001

Submitted by:

Nick Goodman
CEO of Cyrq Energy, Inc.
136 South Main Street, Ste. 600
Salt Lake City, UT 84101

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Annual
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Owner/Operator:
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Submitted by:

Nick Goodman
CEO of Cyrq Energy, Inc.
136 South Main Street, Ste. 600
Salt Lake City, UT 84101

31 January 2014

Table of Contents

Lightning Dock Geothermal HI-01, LLC
2013 Annual Water Quality Monitoring Program Report

Lightning Dock Geothermal HI-01, LLC (LDG), formerly Los Lobos Renewable Power, LLC, hereby submits its 2013 Annual Water Quality Monitoring Program Report pursuant to ¶20(F) of its Discharge Permit, dated July 1, 2009.

Background

Overview. LDG is the operator for two BLM Geothermal Resources Leases, NM-34790 (2,500.96 acres) and NM-108801 (640.00 acres), in Hidalgo County, New Mexico. LDG, which is owned by Cyrq Energy, Inc., has recently completed construction of Phase I of the development of Lightning Dock geothermal resource. Phase I uses geothermal fluids to generate electricity on a utility scale. All wells used in Phase I were drilled prior to 2013 (LDG 45-7, 47-7, 53-7, 55-7, and 63-7).

Technology. Cyrq Energy, Inc. currently operates a binary-cycle power plant in Thermo, Utah, which does not require steam (water vapor) to generate electricity. Instead, geothermal heat is used to heat a working fluid with a boiling point lower than the boiling point of water. The working fluid, when vaporized, turns a screw-style turbine to generate electricity. LDG's recently completed Phase I power plant at the Lightning Dock geothermal resource uses RF245 as the working fluid. When vaporized, RF245 turns the screw-style turbine in four Kaishan KE-1000 1,000 kW power modules which generate electricity. Thus, the technology involves two closed loops.

In the first closed loop, the hot geothermal fluid is pumped to the surface via a production well. The hot geothermal fluid—contained in a pipeline—enters the power plant at over 300° F and flows through a heat exchanger that transfers the heat to RF245, the working fluid. Subsequently, 100% of the geothermal fluid, cooled slightly to between 140° F -160° F, is returned to the same geothermal reservoir or fluid flow intervals via an injection well(s). The fluid is then naturally reheated to be used again and again. At the point where the geothermal fluid leaves the geothermal reservoir to the point where it returns to the reservoir, it remains contained in a pipe under pressure and in the fluid phase. It does not boil or flash or comingle with the working fluid, shallow freshwater aquifers, or air. There are no additives to the geothermal fluid, there is no surface containment, no holding tanks, and no evaporative losses. The geothermal fluid is contained in pipe or well casing during its entire journey, it is chemically unaltered, and is never exposed to the atmosphere.

The second closed loop contains the working fluid. The working fluid, too, is continuously contained in pipes. The working fluid gathers heat from the heat exchanger, vaporizes, turns the screw-style turbine, becomes cooled via the air-cooling fans, and then returns to the heat exchanger to recycle again and again. Please see Figure 1.

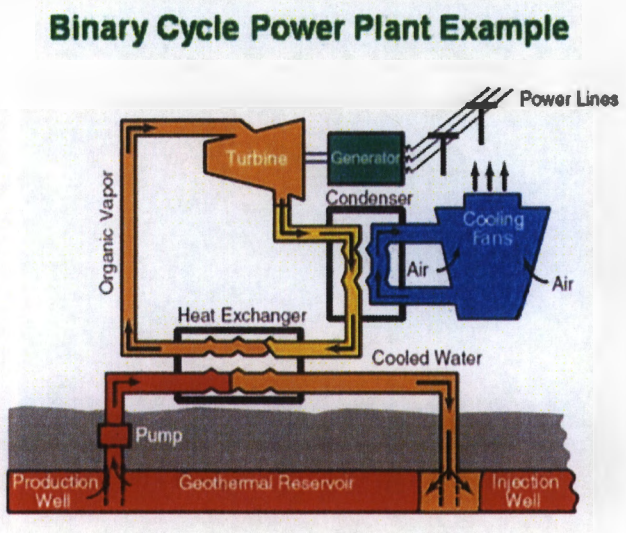

Figure 1

Because the fluids are continuously pumped and injected into the geothermal reservoir at equal and steady rates, equilibrium conditions are maintained within the geothermal reservoir.

Public Interest. The Lightning Dock Geothermal project uses geothermal fluids to generate electricity on a utility scale. By contract, this electricity is sold to PNM and used by New Mexicans. This project is in the public interest because geothermal heat is a renewable source of energy. In addition, geothermal heat is constant. It provides base load (i.e., 24/7) power, unlike wind and solar. Unlike other base-load sources of energy such as coal or natural gas, geothermal electricity is produced with zero emissions.

No Waste. Since the Lightning Dock Geothermal project relies on a geothermal closed-loop system, resulting in no net depletion of the geothermal reservoir, and is constantly returning the thermally depleted geothermal fluids to the geothermal reservoir for reheating, the project is in the interest of conservation. Further, the project prevents waste because the geothermal fluids are beneficially used to generate electricity that will be used by New Mexico customers.

Correlative Rights. Existing leases in the Lightning Dock geothermal area are: Los Lobos/LDG (3,140.96 acres of geothermal resources leased from BLM), Rosette, Inc. (313.59 acres of geothermal resources leased from NM State Land Office) and AmeriCulture, Inc. (10 acres of geothermal resources leased from NM State Land Office). In addition, the McCants family owns at least 240 acres of property with mineral rights in the Lightning Dock geothermal area. The Lightning Dock Geothermal project protects correlative rights and allows each leaseholder and owner their just and equitable share of recoverable geothermal resources.

Discharge Permit Requirements

1. **Cover Sheet.** Please see cover page.

2. **Comprehensive summary of all water quality monitoring data.** LDG installed seven shallow groundwater quality monitoring wells (MW-1 through MW-6 and MW1B) and one intermediate depth (INW-1) water quality monitoring well in 2013 and converted one of its geothermal production wells (LDG 47-7) into a deep up-gradient monitoring well (MW 47-7). Each of these wells was sampled prior to power plant start-up which took place on December 20, 2013. All production and injection wells were also sampled prior to power plant start-up. Permits for the groundwater monitoring wells issued by the New Mexico Office of the State Engineer are presented in **Tab A**.

   Prior to November 2013, water quality data for the geothermal reservoir was available only from historic samples collected from production or injection wells LDG 45-7, LDG 53-7, LDG 55-7 and LDG 63-7. A comprehensive tabular summary of all groundwater samples collected from the geothermal wells prior to December 31, 2013 is included in Table 1 at **Tab B** and a comprehensive summary of all groundwater samples collected from the water quality monitoring wells prior to plant start-up is included in Table 2 at **Tab B**.

3. **Summary charts and tables depicting the constituents that have ever exceeded the ground water standards (20.6.2.3103 NMAC) or "background," or if any toxic pollutant has been detected (20.6.2.7(WW) NMAC).** Tables 1 and 2 at **Tab B** provide groundwater analytical results relative to 20.6.2.3103 NMAC and concentrations detected above 20.6.2.3103 NMAC standards are highlighted in yellow. The Lightning Dock geothermal area, has naturally occurring concentrations of arsenic, fluoride, manganese, sulfate, and total dissolved solids that may exceed the standards in 20.6.2.3103 NMAC. Constituents identified as toxic pollutants per 20.6.2.7 NMAC were detected in some of the recent samples collected from the monitoring, production, or injection wells in the Lightning Dock geothermal area. Concentrations detected above 20.6.2.3103 NMAC standards are highlighted in orange. LDG thinks that these constituents detected in MW 47-7 and LDG 63-7 were introduced by the Well Analysis sampling system.

   Background concentrations have not been established for the Lightning Dock geothermal area. LDG intends to establish background concentration during early 2014.

4. **Description and reason for any remedial work on wells, ponds, ditches, etc.** In 2013, LDG's contractor performed a casing integrity test and cleanout of well LDG 55-7. United Drilling mobilized to LDG on 10/09/13; installed a blow-out preventer, rigged up, and began drilling on 10/10/13; completed drilling on 10/19/13; and demobilized on 10/20/13. To protect the open drill hole, blank liner was installed between 570 feet to 731 feet and slotted

liner was installed from 731 feet to 1486 feet. The approved G-103 forms and Cleanout and Completion Handbook are included at **Tab C**.

LDG completed the characterization of the reserve pits at LDG 45-7 and the characterization of the contents of the reserve pit at 63-7. In addition LDG completed the construction of engineered and lined blow-down ponds at wells LDG 45-7, and LDG 55-7.

5. **Copies of chemical analyses in accordance with Permit Condition 20 (Water Quality Monitoring Program).** Copies of the laboratory analytical sheets for the samples collected from the groundwater quality monitoring wells, production wells, and injection wells in 2013 are included at **Tab D**. Copies of the well development and field sampling sheets are included at **Tab E**.

6. **Copies of any leaks and spill reports submitted in accordance with Permit Condition 15.** There were no leaks or spills to report in 2013.

7. **Miscellaneous section to include any other issues that should be brought to OCD's attention.** LDG anticipates a discussion on the necessity of operating its power plant under the auspices of a renewed Discharge Permit. If it is decided we must renew our Discharge Permit in 2014, we anticipate modifications will have to be made. As indicated in last year's Annual Report, LDG installed air-cooling systems for the condensers on each of the power blocks, thus eliminating the sampling and analysis requirements of Table 5 of the Discharge Permit.

8. **Certification Form.** Please see the following page.

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this 2013 Annual Water Quality Monitoring Program Report, including all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

I further certify that I am a representative who performs similar policy-making functions for Lightning Dock Geothermal HI-01, LLC who has authority to sign for Lightning Dock Geothermal HI-01, LLC.

Yours sincerely,

Signature: Mike Gipson

Printed Name: MIKE Gipson

Title: Director of Operations

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-1, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-1, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-1 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798-MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20039 #5.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

2013 NOV -1

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE

Application for Permit. Form wr-07, Rev 8/25/11

File Number: A-798-MON POD 1	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-1	32° 8' 43"	-108° 50' 08"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A 798-MON #001 | Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

xploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature / Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON-POD1	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-1 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-2, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-2, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-2 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-2 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-2 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-2. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $5.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

2013 NOV -1 AM 10:59
OFFICE OF THE STATE ENGINEER

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD 2	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-2	32° 8' 28"	-108° 50' 16"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 2 | Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie J. Peterson
Applicant Signature

OFFICE OF THE STATE ENGINEER
2013 NOV -1 AM 10:58

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Signature — Charles L. Jackson, MPA (Print)

Title: District 3 Manager
Print

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798 MOAI-P002	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-2 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-2 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-2 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-2. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-3, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-3, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-3 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-3 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-3 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-3. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20014 #500

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

---

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

OFFICE OF THE STATE ENGINEER 2013 MAY -1 AM 10:56

FOR OSE INTERNAL USE	Application for Permit, Form wr-07, Rev 8/25/11
File Number: A-798 MON POD-3	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-3	32° 8' 52"	-108° 49' 59"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MRN POD3	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

OFFICE OF THE STATE ENGINEER
2013 NOV -1 AM 10:56

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature / Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 3	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-3 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.

2. The casing of well A-798-MON POD-3 shall not exceed 2.25 inches outside diameter.

3. The depth of the well A-798-MON POD-3 shall not exceed 85 feet.

4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.

5. No appropriation of water shall be made from well A-798-MON POD-3. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.

6. The State Engineer retains jurisdiction to administer the conditions of this permit.

7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-4, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-4, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-4 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-4 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-4 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-4. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By: Martin McMillan
nimas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $5.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: **Mike Gipson or Kacie Peterson** check here if Agent ☐	Contact or Agent: **David Janney** check here if Agent ☒
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE — Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD-1	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-4	32° 8' 45"	-108° 50' 40"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD 4 | Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature / Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD 4	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-4 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-4 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-4 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-4. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-5, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-5, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-5 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-5 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-5 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-5. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 320044 $500

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. **APPLICANT(S)**

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

OFFICE OF THE STATE ENGINEER

OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD 5	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-5	32° 8' 27"	-108° 50' 01"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

OFFICE OF THE STATE ENGINEER DEMING, NM

OFFICE OF THE STATE ENGINEER ROSWELL, NM

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 5	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

xploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD5	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-5 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.

2. The casing of well A-798-MON POD-5 shall not exceed 2.25 inches outside diameter.

3. The depth of the well A-798-MON POD-5 shall not exceed 85 feet.

4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.

5. No appropriation of water shall be made from well A-798-MON POD-5. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.

6. The State Engineer retains jurisdiction to administer the conditions of this permit.

7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-6, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-6, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-6 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-6 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-6 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-6. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

Office of the State Engineer — Interstate Stream Commission

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

3-20039 $5.00
3-2039

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:

☐ Pollution Control And / Or Recovery ☐ Geo-Thermal

☐ Exploratory ☐ Construction Site De-Watering ☐ Other (Describe):

☒ Monitoring ☐ Mineral De-Watering

A separate permit will be required to apply water to beneficial use.

OFFICE OF THE STATE ENGINEER DEMING, N.M. 2013 OCT 23 AM 8:47

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD-6	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude 'Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: **Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.**
LDG MW-6	**32° 8' 54"**	**-108° 50' 06"**	**Section 7, Township 25 S, Range 19 W**

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ **Yes** ☒ **No** **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ **Yes** ☒ **No**
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

This monitoring well will be used to monitoring groundwater quality related to the operation of the geothermal power plant. This well is a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. It will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. It will be be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval according to State regulations.

OFFICE OF THE STATE ENGINEER
DEA[illegible] NM
2013 OCT 28 AM 8:5[illegible]

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MDN POD 6	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

xploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer.

OFFICE OF THE STATE ENGINEER
2013 OCT 2[illegible] AM 8:5[illegible]

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson
Signature

Charles L. Jackson, MPA
Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 6	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-6 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.

2. The casing of well A-798-MON POD-6 shall not exceed 2.25 inches outside diameter.

3. The depth of the well A-798-MON POD-6 shall not exceed 85 feet.

4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.

5. No appropriation of water shall be made from well A-798-MON POD-6. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.

6. The State Engineer retains jurisdiction to administer the conditions of this permit.

7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-7, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-7, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-7 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-7 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-7 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-7. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By: Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20039 $150.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

---

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

OFFICE OF THE STATE ENGINEER
2011 OCT 28 AM 8:55
RECEIVED

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD-7	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: **Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.**
LDG MW-1B	**32° 8' 39"**	**-108° 50' 08"**	**Section 7, Township 25 S, Range 19 W**

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ **Yes** ☒ **No** **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ **Yes** ☒ **No**
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

This monitoring well will be used to monitoring groundwater quality related to the operation of the geothermal power plant. This well is a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. It will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. It will be constructed with 2-inch ID schedule 40 PVC casing, have up to a 25-foot screened interval and will be constructed according to State regulations.

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD7	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: [signature]
Signature

Charles L. Jackson, MPA
Print

Title: District 3 Manager
Print

OFFICE OF THE STATE ENGINEER
2013 NOV 28 AM 8:52

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 7 | Trn Number:

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 25, 2013

FILE: A-799

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-799, which has been approved.

Your attention is called to the Conditions of Approval under permit A-799-MON-POD1, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for a monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-799-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-799-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-799-MON POD-1 shall not exceed 600 feet.
4. PVC casing set using any cement grout is subject to collapse and/or deformation due to column weight and heat of hydration of the curing cement. Casing manufacturer should be consulted to establish the timing and placement of safe intervals of annular sealant.
5. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
6. No appropriation of water shall be made from well A-799-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
7. The State Engineer retains jurisdiction to administer the conditions of this permit.
8. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager
By:
Martin McMillan
Animas Basin Manager
MM:pg
Cc: State Engineer

File No. A 799 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $500

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

2013 NOV -1 AM 10:52 OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE — Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-799 Mon Pod-1	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG IW	32° 8' 40" 39.46"	-108° 50' 18" 13.87"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

2013 NOV -1 AM 8:12
OFFICE OF THE STATE ENGINEER

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Mud-rotary drilling will advance an approximate 8-inch borehole to approximately 600 feet. The borehole geology will be logged in the field. The monitoring well will consist of 2-inch diameter Schedule 80 PVC rated for geothermal use. 15 feet of 0.020 continuous slot screen will be installed from approximately 600 feet below existing grade to approximately 585 feet below existing grade. 585 of blank casing will be installed above the screen section. A 10/20 silica sand filter pack will be emplaced via tremie pipe to a minimum of 3 feet above the screen section. A minimum 3-foot think pure bentonite plug will be placed above the filter place via tremie pipe and the annulus of the well bore will be pressure-grouted from the bottom of the

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number:	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

OFFICE OF THE STATE ENGINEER
2013 NOV 21 AM 10:52

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 25th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number:	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-799

APPLICATION: A-799-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

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7. The State Engineer retains jurisdiction to administer the conditions of this permit.
8. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 25th day of November, 2013.

Scott A. Verhines, P.E.,

Charles L. Jackson, MPA
District 3 Manager

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-1A	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4203.94 ft above MSL
Elevation Pad: 4202.83 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/18/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/18/2013
Filter Pack: 57 - 85 feet
Screened Interval: 60 - 85 feet

N (ft): 417894
E (ft): 2412787

▼ Static Water Level (BGS/Elev. MSL): 4136.39 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Silty Sand**, fine to medium grained, non-plastic,gray brown, dry.	4203	
5						4198	
10				18	**Clayey Sand with Gravel**, predominantly medium grained, trace coarse sand, medium plasticity, moist, brown; gravel predominantly 1/2 inch.	4193	
15						4188	
20				11	**Silty Clay**, low plasticity, moist, gray brown.	4183	
25					**Clayey Sand With Gravel**, predominantly fine- to medium grained, medium plasticity.	4178	Very moist at ~30 feet
30	- 2 inch schedule 80 CPVC casing; Cement grout			5		4173	
35						4168	
40				30	**Clay with Sand with Gravel**, medium plasticity, moist, brown.	4163	
45						4158	
50				66	**Clayey Sand**, predominantly medium grained, medium plasticity, gray brown.	4153	
55	- 3/8 inch coated bentonite pellets				**Sand with Silt with Gravel**,poorly graded, medium grained, moist, brown; gravel up to 3/4 inch, angular.	4148	
60						4143	
65 ▼	- 10/20 Silica sand			37	**Clayey Sand with Gravel**, predominantly fine to medium grained, medium plasticity, moist, gray brown; gravel predominantly ~1/2 inch, subangular, ranging up to 3/4 inch.	4138 ▼	
70						4133	
75	- 0.020 Slotted well screen				Bottom 5-10 feet contains sandy layers and flowing sands.	4128	
80	- Slough, flowing sands (estimated from sand usage)					4123	
85					Total Depth = 85 ft	4118	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-1B	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4203.00 ft above MSL
Elevation Pad: 4202.00 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/19/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/19/2013
Filter Pack: 57 - 85 feet
Screened Interval: 60 - 85 feet

N (ft): _____ E (ft): _____

▼ Static Water Level (BGS/Elev. MSL): _____

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Silty Clayey Sand**, fine to medium grained, low plasticity, brown, trace gravel.	4202	
5						4197	
10				18	**Clayey Sand**, predominantly medium grained, medium plasticity, moist, brown.	4192	
15						4187	
20				18		4182	
25					**Clayey Sand with Gravel**; gravel subangular, ~1/2 inch	4177	
30	- Cement Grout - 2 inch schedule 80 CPVC casing			6	**Clay**, medium plasticity, very moist, brown.	4172	Very moist zone.
35						4167	
40				47	**Clayey Sand**, medium grained, medium plasticity, moist, gray brown.	4162	
45					**Silty Clayey Sand**, predominantly coarse, low plasticity, moist, gray brown.	4157	
50				77	**Clayey Sand**, predominantly medium grained, medium plasticity, moist, gray brown.	4152	
55	- 3/8 inch coated bentonite pellets					4147	
60					**Clayey Sand with Gravel**; gravel predominantly ~1/2 inch ranging up to 3/4 inch, subangular.	4142	Very moist at~65 feet
65	- 10/20 silica sand			42	**Clay**, medium plasticity, very moist, gray brown.	4137	
70	- 0.020 Slotted well screen				Trace Gravel below ~72 feet.	4132	
75					**Clay with Sand**, medium plasticity, trace gravel, wet to supersaturated. Flowing sands at bottom of hole.	4127	Wet
80						4122	
85	- Slough and flowing sands (estimated from sand usage)				Total Depth = 85 ft	4117	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-2	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4205.00 ft above MSL
Elevation Pad: 4204.15 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/14/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/14/2013
Filter Pack: 52 - 80 feet
Screened Interval: 55 - 80 feet

N (ft): 419017
E (ft): 2412933

▼ Static Water Level (BGS/Elev. MSL): 4135.15 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Clayey Sand With Gravel**, predominantly fine to medium grained, medium plasticity, damp, gray brown; gravel up to 3/4 inch, angular.	4204	Gravel horizon at 5 feet
5						4199	
10						4194	
15					**Silty Clayey Sand**, fine to medium grained, low plasticity, moist, yellow gray brown; trace fine gravel up to 3/8 inch, subangular.	4189	
20						4184	
25	- 2 inch schedule 80 CPVC casing; Cement grout				Occasional thin clayey horizons and gravel horizons.	4179	
30					**Clayey Sand**, predominantly medium grained with occasional coarse horizons, medium plasticity, brown.	4174	
35						4169	
40						4164	
45						4159	
50	- 3/8 inch coated bentonite pellets				Gravel horizon with trace caliche at ~39 feet; gravel up to 3/4 inch, subround to subangular.	4154	
55					Sand is coarse at 45 feet.	4149	
60					**Clayey Gravel with Sand**, poorly graded, ranging up to 1 inch, subround; medium plasticity, moist, gray brown.	4144	
65	- 10/20 silica sand 0.020 Slotted well screen					4139	
▼ 70					Likely sandy intervals near bottom of boring.	4134	
75						4129	
80					Total Depth = 80 ft	4124	
85						4119	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-3	amec

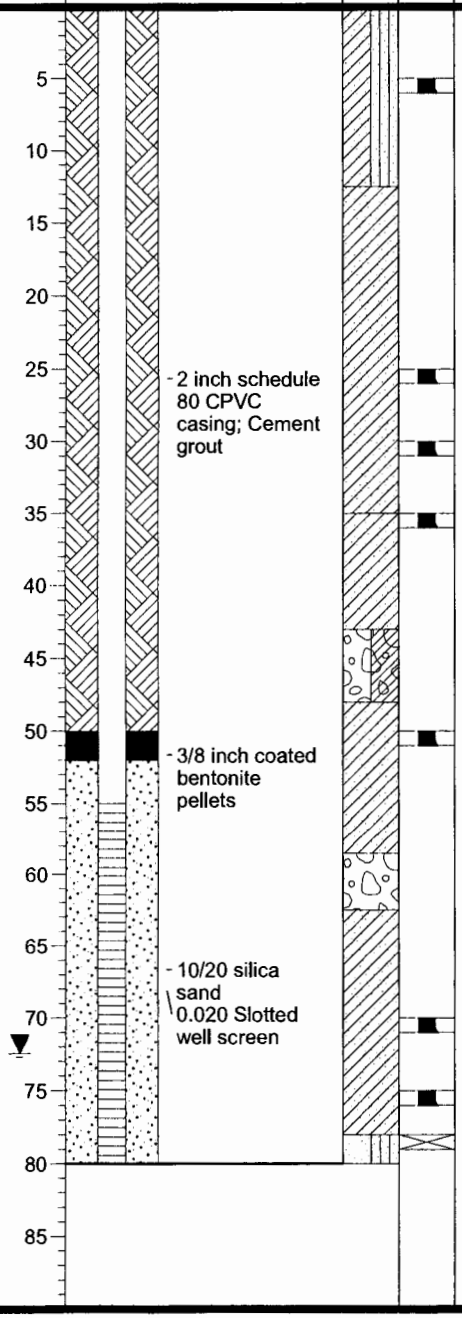
Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4211.08 ft above MSL
Elevation Pad: 4210.26 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/15/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/15/2013
Filter Pack: 52 - 80 feet
Screened Interval: 55 - 80 feet

N (ft): 418962
E (ft): 2413681

▼ Static Water Level (BGS/Elev. MSL): 4137.84 ft above MSL



Depth (ft)	Material Description	Elev. (ft)	Remarks
0	**Silty Clayey Sand with Gravel**, predominantly fine to medium grained, trace coarse sand, low plasticity,damp, gray brown; gravel predominantly 1/2 inch, subangular.	4210	
15	**Clayey Sand with Gravel**, predominantly medium- to coarse grained, medium plasticity, damp to moist; gravel 1/2-3/4 inch, subangular.	4195	
35	Subangular gravel horizon: gravel up to 1 inch at 39 feet BGS.	4175	
45	**Gravel with Clay and Sand**, poorly graded, ranging up to 3/4 inch, angular; finer fraction medium grained sand and clay, medium plasticity, gray brown.	4165	
50	**Clayey Sand**, medium- to coarse grained, medium plasticity, gray brown.	4160	
55	**Gravel with Clay and Sand**, poorly graded, subangular, ranging up to 3/4 inch, subangular.	4155	
60	**Clayey Sand**, predominantly medium grained, medium plasticity, moist, gray brown. Sandy horizons likely below 75 feet.	4150	
70 ▼	**Sand with Silt**, poorly graded, highly cemented, predominantly medium grained.	4140 ▼	
80	Auger refusal at 80 feet.	4130	
85		4125	

Total Depth = 80 ft

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-4	amec

Client: Lightning Dock Geothermal HI-01, LLC
Type of Completion: Monitoring Well
Surface Completion: Stickup
Project Number: 11-517-00102.06
Start Date: 11/13/2013
Completed: 11/13/2013
Field Geologist: E. Koenig
Formation of Completion: Alluvium
Filter Pack: 52 - 80 feet
Drilling Contractor: Rodgers & Co., Inc.
Borehole Diameter: 8 inches
Screened Interval: 55 - 80 feet
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
N (ft): 419101
E (ft): 2411617
Elevation TOC: 4194.89 ft above MSL
Elevation Pad: 4193.54 ft above MSL
Static Water Level (BGS/Elev. MSL): 4127.21 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Clay with Sand**, medium plasticity, windblown, dry, gray brown.	4194	
5						4189	
10					**Silty Clayey Sand**, medium grained, low PI, trace fine gravel ~3/8 inch.	4184	
15					**Clayey Sand**, fine- to medium grained, medium plasticity, moist, gray brown.	4179	Increasing in moisture at ~20 feet. Perched water at ~37 feet.
20						4174	
25	- 2 inch schedule 80 CPVC casing; Cement grout					4169	
30						4164	
35						4159	
40						4154	
45					Traces of coarse sand and fine, angular gravel, ~3/8 inch.	4149	
50	- 3/8 inch coated bentonite pellets				**Clayey Sand**, medium- to coarse grained, medium plasticity, moist gray brown.	4144	
55						4139	
60					Bottom 5-10 feet likely contains sandy horizons.	4134	
65 ▼	- 10/20 silica sand - 0.020 Slotted well screen					4129 ▼	
70						4124	
75						4119	
80					Total Depth = 80 ft	4114	
85						4109	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-5	amec

Client: Lightning Dock Geothermal HI-01, LLC
Type of Completion: Monitoring Well
Surface Completion: Stickup
Project Number: 11-517-00102.06
Start Date: 11/16/2013
Completed: 11/16/2013
Field Geologist: E. Koenig
Formation of Completion: Alluvium
Filter Pack: 60 - 78 feet
Drilling Contractor: Rodgers & Co., Inc.
Borehole Diameter: 8 inches
Screened Interval: 63 - 78 feet
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
N (ft): 416451
E (ft): 2413497
Elevation TOC: 4211.24 ft above MSL
Elevation Pad: 4210.24 ft above MSL
Static Water Level (BGS/Elev. MSL): 4135.23 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Silty Sand**, fine- to medium grained, non-plastic, dry, gray brown.	4210	
5						4205	
10					**Clayey Sand**, predominantly fine- to medium grained, medium plasticity, trace coarse sand, trace gravel.	4200	
15					**Clayey Sand**, predominantly medium- to coarse grained.	4195	
20					**Clay with Sand**, medium plasticity, gray brown, trace gravel up to 1 inch, subangular at 20 feet.	4190	
25						4185	
30	- 2 inch schedule 80 CPVC casing; Cement grout				**Clayey Sand with Gravel**, predominantly fine- to medium grained, medium plasticity, gray brown; gravel predominantly ~1/2 inch, ranging up to 3/4 inch, subangular.	4180	
35						4175	
40						4170	
45						4165	
50						4160	
55					**Clay with Sand**, medium plasticity, gray brown.	4155	
60	- 3/8 inch coated bentonite pellets					4150	
65						4145	
70	- 10/20 silica sand - 0.020 Slotted well screen				**Clayey Sand**, fine- to medium grained, medium plasticity, gray brown; trace gravel, predominantly ~1/2 inch, ranging up to 1 inch, angular.	4140	
75 ▼						4135 ▼	
80					**Sand with Silt**, hard, well-cemented, possibly silicified. Auger refusal at 78 feet.	4130	
85					Total Depth = 78 ft	4125	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-6	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4197.90 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/17/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/17/2013
Filter Pack: 57 - 85 feet
Screened Interval: 60 - 85 feet

N (ft): 416482
E (ft): 2412309

▼ Static Water Level (BGS/Elev. MSL): 4132.57 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Clay**, windblown, medium plasticity, trace sand, dry, gray brown.	4198	
5						4193	
10					**Clayey Sand**, medium- to coarse grained, medium plasticity, damp to moist, gray brown.	4188	
15					**Clay**, medium plasticity, moist, brown.	4183	
20					**Clayey Sand**, fine- to medium grained, medium plasticity, moist, gray brown.	4178	
25						4173	Very moist at ~23 feet.
30	- 2 inch schedule 80 CPVC casing; Cement grout				**Clay with Sand**, medium plasticity, moist, gray brown.	4168	
35					**Clayey Sand**, predominantly medium grained, medium plasticity, moist, gray brown.	4163	
40						4158	
45						4153	
50						4148	
55	- 3/8 inch coated bentonite pellets					4143	
60					Trace fine gravel below ~60 feet, 1/4-3/8 inch, angular.	4138	Very moist at ~68 feet.
65 ▼					Sandy horizons likely below 75 feet.	4133	
70	- 10/20 silica sand 0.020 Slotted well screen					4128	
75						4123	
80						4118	
85					Total Depth = 85 ft	4113	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Type of Completion: Monitoring Well
Surface Completion: Stickup
Project Number: 11-517-00102.06
Start Date: 12/3/2013
Completed: 12/3/2013
Field Geologist: E. Koenig
Formation of Completion: Alluvium
Filter Pack: 565 - 600 feet
Drilling Contractor: Rodgers & Co., Inc.
Borehole Diameter: 8 inches
Screened Interval: 570 - 590 feet
Driller: Art Baeza
Drilling Method: Mud Rotary
N (ft): 417682
E (ft): 2412393
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL
▼ Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					Alluvium: **Clayey Sand**, medium plasticity, sand predominantly coarse, mostly volcanics: ~60% Rhyolite ~20% Andesite or basalt ~20% Chert	4198	
5						4193	
10					**Clay with Gravel**, medium plasticity; gravel: mixed volcanics: rhyolite, andesite, and chert, some limonite staining and low grade greenish alteration.	4188	
15						4183	
20					**Clayey Sand**, predominantly medium grained, trace gravel: mixed volcanics, rhyolite and basalt/andesite; sand is subangular: quartz, feldspar, chert and mafics.	4178	
25						4173	
30					**Clay and Clayey Sands**, medium plasticity; trace gravel of mixed volcanics: rhyolite, maybe dacite and andesite, trace yellow jasper.	4168	
35						4163	
40						4158	
45						4153	
50					**Clay**, trace medium sand, medium plasticity, yellow gray brown.	4148	
55						4143	
60					**Clayey Sand**, predominantly fine grained, some medium grained horizons, medium plasticity, trace gravel, ~1/2 inch, subround, mostly dusky red and gray, rhyolitic with visible sanidine crystals.	4138	Gravelly zone at ~75 feet.
65						4133	
70						4128	
75 ▼						4123 ▼	
80					Generally sandier and coarser with intermittent horizons of fine clayey sand.	4118	
85						4113	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

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Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

N (ft): 417682
E (ft): 2412393

Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
95					Generally sandier and coarser with intermittent horizons of fine clayey sand.' *Layer continued from previous page'*	4108 4103	
100					**Clay**, medium plasticity, trace sand, gray brown.	4098	
105						4093	
110					**Clayey Sand**, fine- to medium grained, medium plasticity, trace gravel ranging up to 1/2 inch, subround, mostly volcanics.	4088	
115						4083	
120						4078	
125						4073	
130					**Sand with Silt with Gravel**, poorly graded, subangular, medium- to coarse grained; mixed volcanics including tan, dusky red and gray rhyolites, trace yellow jasper, basalt and breccia.	4068	
135						4063	
140						4058	
145					Increasing gravel with depth.	4053	
150					Occasional intervals of clayey sand.	4048	
155					**Gravels with Sand**, poorly graded, approximately 1/2-3/4 inch, mixed volcanics: tan and dusky red rhyolite, volcaniclastics, yellow gray chert.	4043	
160						4038	
165						4033	
170					**Clayey Gravel with Sand**	4028	
175						4023	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
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Borehole Diameter: 8 inches
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Driller: Art Baeza
Drilling Method: Mud Rotary
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E (ft): 2412393
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL
Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
185					**Sand**, poorly graded, medium- to coarse grained, subangular highly cemented and far less heterogeneous than previously -mainly red-brown rhyolite.	4018	
190					**Clay with fine Sand**, medium plasticity.	4013	
195						4008	
200					**Sand with Gravel**, poorly graded, medium- to coarse grained, subangular, primarily red brown rhyolite, very hard and well cemented.	4003	
205						3998	
210						3993	
215						3988	
220						3983	
225						3978	
230					**Clayey Sand with Gravel**, predominantly medium- to coarse grained, medium plasticity, reddish brown.	3973	
235						3968	
240					Fine-to medium grained, gray brown	3963	
245						3958	
250					**Clay**, medium plasticity, greenish gray.	3953	
255						3948	
260						3943	
265						3938	
						3933	Change from tricone to PDC bit.

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

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Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

N (ft): 417682
E (ft): 2412393

▼ Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
275	- 2 inch schedule 80 CPVC casing; Cement grout				**Sand with Gravel**, poorly graded, medium- to coarse grained, angular; gravel is flattened and subround to subangular, material mostly volcanically derived: red brown, gray and purplish gray rhyolites with trace greenish alteration.	3928	Change from tricone to PDC bit.
280					Very hard and well-cemented.' *Layer continued from previous page'*	3923	
285					**Sand**, angular, much easier to drill through; change in lithology to mostly quartz with only ~5% volcanics. Some clayey horizons toward bottom of unit.	3918	
290					**Clay**, medium plasticity, bright red brown, possibly weathered or hydrothermally altered rhyolite.	3913	
295					Intermittent horizons of hard sands.	3908	
300					**Clay**, medium plasticity.	3903	
305					Hard sands	3898	
310					Alternating Sandy and clayey layers.	3893	
315					**Gravel**, poorly graded, ranging up to 1 inch, flattened and subround , mostly volcanics: red brown and gray rhyolites with visible sanidine crystals, trace quartz grains and slight trace grains with either greenish alteration or olivine content.	3888	
320					Occasional clay or clayey sand horizons below 335 feet.	3883	Trip out and change back to tricone bit at 320 feet BGS per Troy Richardson's instructions. Material on PDC bit was brown clay and purplish gray pumice.
325					Grading sandier with depth.	3878	
330						3873	
335						3868	
340						3863	
345						3858	
350						3853	
355						3848	
						3843	

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Borehole Diameter: 8 inches
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Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
455					**Sand**, poorly graded, medium- to coarse grained, mostly quartz and volcanics: brown and red brown rhyolite, trace more mafic material, slight trace limonite coated grains, greenish alteration in a few grains.	3748	
460						3743	
465					**Clay with Gravel**, high plasticity, gray.	3738	
470					**Sand with very fine gravel**, poorly graded, medium- to coarse grained, angular: quartz and volcanics with slight trace clay shale fragments.	3733	
475						3728	
480						3723	
485						3718	
490						3713	
495						3708	
500					Gravel, size unknown, mixed volcanics with slight trace blue gray clay shale fragments.	3703	
505						3698	
510					**Sand**, poorly graded, medium- to coarse grained, subangular, quartz and mixed volcanics, slight trace clay shale fragments.	3693	
515						3688	
520						3683	
525						3678	
530						3673	
535						3668	
						3663	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
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▼ Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
545					**Sand**, poorly graded, medium- to coarse grained, subangular, quartz and mixed volcanics, slight trace clay shale fragments.' *Layer continued from previous page'*	3658	
550						3653	
555					Grading to coarse grained.	3648	
560						3643	
565	- 3/8 inch coated bentonite pellets					3638	
570						3633	
575						3628	
580	- 0.020 Slotted well screen \ 10/20 Silica sand				Some gravel, round to subround, ~1/2 inch, rhyolite.	3623	
585						3618	
590						3613	
595	- Blank Casing (Sump)					3608	
600					Total Depth = 600 ft	3603	
605						3598	
610						3593	
615						3588	
620						3583	
625						3578	
						3573	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Summary of Production Injection Well Analytical Results
Lightning Dock Geothermal HI-01, LLC - Hidalgo County, New Mexico
TABLE 1

			Well ID	LDG 45-7	LDG 45-7	LDG 45-7	LDG 45-7	LDG 45-7	LDG 53-7	LDG 53-7	LDG 55-7	LDG 55-7	LDG 55-7	LDG 55-7	LDG 55-7	LDG 63-7	LDG 63-7
			Fluid Type	Single Phase	Single Phase Fluid	Flashed Fluid	Single Phase Fluid	Total Fluid	Single Phase Fluid	Single Phase Fluid	Single Phase Fluid	Flashed Fluid	Total Fluid	Flashed Fluid	Total Fluid	Single Phase Fluid	Single Phase Fluid
			Sample ID	1312A59-001	16082-1	16082-2	LDG 45-7	16082-2	1312666	16082-3	1312055-001	14949-1	14949-1	14949-2	14949-2	1312A59-002	WW63-7
		NMAC 20.6.2 Standard	Sample Date	12/19/2013	1/26/12	1/26/12	12/8/11	1/26/12	12/13/13	1/26/12	11/27/13	8/5/10	8/5/10	8/5/10	8/5/10	12/20/13	8/28/12
	Analyte	Dissolved															
A		Concentration															
1	Arsenic (As)	0.1 mg/l		0.012	0.018	0.015	0.0098	0.014	ND	0.016	0.0074	0.02	0.019	0.018	0.017	3.2	0.056*
2	Barium (Ba)	1.0 mg/l		0.065	0.076	0.061	0.054	0.05861	0.038	0.042	0.094	0.071	0.071	0.068	0.05	0.051	0.014*
3	Cadmium (Cd)	0.01 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
4	Chromium (Cr)	0.05 mg/l		NA	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA
5	Cyanide (CN)	0.2 mg/l		ND	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA
6	Fluoride (F)	1.6 mg/l		14	11.1	11.6	10	11	1.4	11.6	9.5	10.8	10.3	9.37	8.93	17	14.2
7	Lead (Pb)	0.05 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	0.0011	NA
8	Total Mercury (Hg)	0.002 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
9	Nitrate (NO_3 as N)	10.0 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	<0.500
10	Selenium (Se)	0.05 mg/l		0.0017	NA	NA	0.0034	NA	NA	NA	0.0038	NA	NA	NA	NA	0.0021	NA
11	Silver (Ag)	0.05 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
12	Uranium (U)	0.03 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
13	Radioactivity: Radium (Ra 226)	30 pCi/L		6.49 ± 1.35 (0.367)	NA	NA	NA	NA	0.166 ± 0.380 (0.225)	NA	NA	NA	NA	NA	NA	-0.220 ± 0.306 (0.775)	NA
14	Radioactivity: Radium (Ra 228)	30 pCi/L		0.522 ± 0.331 (0.614)	NA	NA	NA	NA	0.414 ± 0.460 (0.931)	NA	NA	NA	NA	NA	NA	0.0100 ± 0.365 (0.847)	NA
15	Radionuclides: Radon 222	None		2560	NA	NA	NA	NA	-67.8 U	NA	NA	NA	NA	NA	NA	78.6 U	NA
16	Benzene	1.0 ug/l		ND	NA	NA	NA	NA	ND	NA	1.8	NA	NA	NA	NA	4.8	NA
17	Polychlorinated biphenyls (PCB's)	1 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
18	Toluene	750 ug/l		ND	NA	NA	NA	NA	ND	NA	3.4	NA	NA	NA	NA	2	NA
19	Carbon Tetrachloride	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
20	1,2-dichloroethane (EDC)	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
21	1,1-dichloroethene (1,1-DCE)	5 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
22	1,1,2,2-tetrachloroethylene (PCE)	20 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	370	NA
23	1,1,2-trichloroethylene (TCE)	100 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	1	NA
24	ethylbenzene	750 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
25	total xylenes	620 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
26	methylene chloride	100 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
27	chloroform	100 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
28	1,1-dichloroethane	25 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
29	ethlene dibromide (EDB)	0.1 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
30	1,1,1-trichloroethane	60 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
31	1,1,2-trichloroethane	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
32	1,1,2,2-tetrachloroethane	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
33	vinyl chloride	1 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
34	PAH's: total naphthalene + monomethylnaphthalenes	30 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
35	benzo-a-pyrene	0.7 ug/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
36	TPH 418.1	None		52	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	2.8	NA
B																	
1	Chloride (Cl)	250.0 mg/l		97	86.9	90.1	86	85.8	33	79	140	90.2	86	89.8	85.6	67	78.1
2	Copper (Cu)	1.0 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	0.029	0.006*
3	Iron (Fe)	1.0 mg/l		ND	0.026	0.021	ND	<0.005	ND	0.04	0.4	ND	ND	ND	ND	0.29	3.91*
4	Manganese (Mn)	0.2 mg/l		0.018	0.027	0.0082	ND	0.0078	0.067	0.002	0.13	0.016	0.015	0.0069	0.0066	0.028	0.183*
5	Phenols	0.005 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	18	NA
6	Sulfate (SO_4)	600.0 mg/l		540	507	526	510	501	120	453	630	531	506	526	501	250	303
7	Total Dissolved Solids (TDS)	1000.0 mg/l		1270	1370	1390	1200	1324	321	1200	842	1370	1306	1360	1296	800	1020
8	Zinc (Zn)	10.0 mg/l		ND	NA	NA	ND	NA	0.049	NA	ND	NA	NA	NA	NA	0.027	NA
9	pH	between 6-9		6.82	6.64	8.37	6.7	NA	7.53	9.51	6.89	6.97	NA	6.6	NA	8.41	9.45
C																	
1	Aluminum (Al)	5.0 mg/l		0.21	0.177	0.175	ND	0.167	ND	0.209	0.08	NA	NA	NA	NA	0.04	NA
2	Boron (B)	0.75 mg/l		0.46	0.441	0.432	0.46	0.411	0.12	0.482	0.65	0.469	0.447	0.467	NA	2	2.09*
3	Cobalt (Co)	0.05 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
4	Molybdenum (Mo)	1.0 mg/l		0.026	NA	NA	0.03	NA	ND	NA	0.046	NA	NA	NA	NA	0.094	NA
5	Nickel (Ni)	0.2 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	0.049	NA
6	Bromide	None		ND	NA	NA	NA	NA	NA	NA	0.46	NA	NA	NA	NA	ND	NA
7	Lithium (Li)	None		0.9	NA	NA	NA	NA	0.0887	NA	0.8	NA	NA	NA	NA	0.6	NA
8	Rubidium (Rb)	None		0.25	NA	NA	NA	NA	0.0127	NA	0.3	NA	NA	NA	NA	0.07	NA
9	Tungsten	None		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA

NOTES

NA = Not Analyzed

NA = Not Detected

* Total metal not dissolved metal

U = Not detected at minimum detectable concentration

H = Anaylsis performed past recommended holding time

Summary of Monitoring Well Analytical Results
Lightning Dock Geothermal HI-01, LLC - Hidalgo County, New Mexico
TABLE 2

	Analyte	NMAC 20.6.2 Std. Dissolved Concentration	Well ID: / Sample Date: / Lab ID:	MW-1 11/25/2013 1311B14-001	MW-1B 12/11/2013 1312659-001	MW-2 11/25/2013 1311B14-002	MW-2 Duplicate 11/25/2013 1311B14-003	MW-3 11/24/2013 1311B14-004	MW-4 11/24/2013 1311B14-005	MW-5 11/24/2013 1311B14-006	MW-6 11/23/2013 1311B14-007	INW1 12/20/2013 1312A59-003	LDG 47-7 12/21/2013 1312840-001
1	Arsenic (As)	1 mg/l		0.0055	0.011	0.0082	0.0083	0.019	0.012	0.0060	0.020	0.013	0.42
2	Barium (Ba)	1 mg/l		0.063	0.14	0.044	0.043	0.06	0.059	0.041	0.047	0.099	0.13
3	Cadmium (Cd)	0.01 mg/l		ND	ND	ND	ND	ND	ND	ND	MD	ND	ND
4	Chromium (Cr)	0.5 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
5	Cyanide (CN)	0.2 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6	Fluoride (F)	1.6 mg/l		7.7	9.3	11	11	12	4.3	1.3	6.9	3.9	12
7	Lead (Pb)	0.05 mg/l		ND	0.0044	ND	ND	ND	ND	ND	ND	ND	ND
8	Total Mercury (Hg)	0.002 mg/l		0.00079	0.0016	ND	ND	0.00034	ND	0.0010	0.00077	ND	ND
9	Nitrate(NO3 as N)	10 mg/l		2.6	15	3.1	3.2	2.1	12	42	42	2.9	ND
10	Selenium (Se)	0.05 mg/l		0.0052	NA	0.0035	0.0035	0.0034	0.033	0.028	0.011	0.01	ND
11	Silver (Ag)	0.05 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12	Uranium (U)	0.03 mg/l		0.011	0.0037	ND	ND	ND	0.0051	0.014	0.0012	0.0013	ND
13	Radioactivity: Radium 266	30 pCi/l		0.285 ± 0.350 (0.571)	2.00 ± 0.722 (0.566)	0.266 ± 0.377 (0.638)	0.183 ± 0.312 (0.550)	0.102 ± 0.375 (0.720)	1.32 ± 0.615 (0.664)	0.305 ± 0.401 (0.667)	0.140 ± 0.305 (0.562)	1.04 ± 0.535 (0.561)	0.0340 ± 0.481 (0.981)
14	Radioactivity: Radium 288	30 pCi/l		0.888 ± 0.456 (0.799)	0.711 ± 0.402 (0.727)	0.0585 ± 0.308 (0.702)	0.468 ± 0.385 (0.767)	0.156 ± 0.270 (0.590)	0.542 ± 0.396 (0.772)	0.333 ± 0.452 (0.966)	2.53 ± 0.949 (1.39)	0.462 ± 0.343 (0.666)	-0.0191 ± 0.378 (0.924)
15	Radionuclides: Radon 222	None		238	676	580	567	781	1090	197	507	1090	-33.4 UH
16	Benzene	1 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	23
17	Polychlorinated biphenyls (PCB's)	1 ug/l		NA	ND	NA	NA	NA	NA	NA	NA	ND	ND
18	Toluene	750 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	45
19	Carbon Tetrachloride	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20	1,2-dichloroethane (EDC)	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21	1,1-dichloroethylene (1,1-DCE)	5 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22	1,1,2,2,-tetrachloroethene (PCE)	20 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23	1,1,2-trichloroethylene (TCE)	100 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24	ethylbenzene	750 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3
25	Total xylenes	620 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	19
26	methylene chloride	100 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	chloroform	100 ug/l		28	33	4.9	5.2	21	ND	ND	ND	ND	ND
28	1,1-dichloroethane	25 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	ethlene dibromide (EDB)	0.1 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	1,1,1-trichloroethane	660 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31	1,1,2-trichloroethane	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32	1,1,2,2-tetrachloroethane	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33	vinyl chloride	1 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34	PAH's; total naphthalene + naphthalenes	30 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND ?
35	benzo-a-pyrene	0.7 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
36	TPH 418.1	None		ND	1.3	ND	ND	1.1	NA	NA	ND	1.4	ND
1	Chloride (Cl)	250 mg/l		100	120	96	96	94	710	230	130	170	130
2	Copper (Cu)	1 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	Iron (Fe)	1 mg/l		ND	8.5	ND	ND	0.24	ND	0.021	0.39	0.033	0.32
4	Manganese (Mn)	0.2 mg/l		0.21	0.27	0.041	0.036	0.18	0.15	0.27	0.074	0.019	0.14
5	Phenol	0.005 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	14
6	Sulfate	600 mg/l		670	540	510	510	540	1200	930	950	700	250
7	Total Dissolved Solids (TDS)	1000 mg/l		1780	1520	1380	1210	1380	3210	2010	1880	1480	1190
8	Zinc (Zn)	10 mg/l		ND	0.015	0.015	ND	ND	0.048	0.023	0.033	ND	0.022
9	pH	6-9 pH Units		7.69	7.66	7.6	7.58	8	7.38	7.62	7.56	8.59	7.33
1	Aluminum (Al)	5 mg/l		0.034	25	0.049	0.024	0.31	ND	ND	0.63	0.069	0.05
2	Boron (B)	.75 mg/l		0.7	0.45	0.37	0.36	0.44	0.22	0.31	0.39	0.52	2.6
3	Cobalt (Co)	0.05 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4	Molybdenum (Mo)	1.0 mg/l		0.058	0.029	0.027	0.026	0.065	0.014	0.031	0.035	0.055	0.038
5	Nickel (Ni)	0.2 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.081
6	Bromide	None		ND	NA	ND	ND	ND	2.2	1.2	ND	0.8	0.32
7	Lithium (Li)	None		0.8	0.533	0.7	0.7	0.5	1.7	0.4	0.8	0.6	1
8	Rubidium (Rb)	None		0.2	0.189	0.1	0.1	0.2	0.4	0.1	0.1	0.21	0.24
9	Tungsten	None		ND	0.0386	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
NA = not analyzed
ND = not detected
* total metal not dissolved metal

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Fee ☐

5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☑ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☐

7. Unit Agreement Name:

2. Name of Operator: Los Lobos Renewable Power, LLC

8. Farm or Lease Name:

3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101

9. Well No.: LDG 55-7

4. Location of Well
Unit Letter J 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.

10. Field and Pool, or Wildcat: Lightning Dock Geothermal

15. Elevation (Show whether DF, RT, GR, etc.): 4198 GR

12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐			COMMENCE DRILLING OPNS.	☐	PLUG & ABANDONMENT	☐
JLL OR ALTER CASING	☐	CHANGE PLANS	☐	CASING TEST AND CEMENT JOB	☐		
OTHER	☐			OTHER Cement bond log performed in			☑

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.

Subsequent notice of a cement bond log.

Baker Hughes performed a cement bond log on LDG 55-7 in 2008 and the cement bond appeared to be in good condition. Please find attached a copy of this cement bond log and consider it partial fulfillment of the mechanical integrity test that is required for this well to be placed on injection.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W. Mowrey, PG TITLE Agent for Los Lobos Renewable Power, LLC DATE March 22, 2013

APPROVED BY [signature] TITLE Environmental Engineer DATE 11/12/2013

CONDITIONS OF APPROVAL, IF ANY:

November 6, 2013

Project 1151700102

RECEIVED OCD

2013 NOV 12 P 4:01

Mr. Carl Chavez, CHMM
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3490
CarlJ.Chavez@state.nm.us

RE: Subsequent Sundry Notice Form G-103 for Geothermal Production Well LDG 55-7 for Lightning Dock Geothermal HI-01, LLC, Section 7, Twp. 25S, Rng. 19W, Hidalgo County, New Mexico

Dear Mr. Chavez:

On behalf of Lightning Dock Geothermal HI-01, LLC, AMEC Environment & Infrastructure, Inc. (AMEC) respectfully submits the attached Subsequent Sundry Notice for the clean out and liner installation in LDG-55-7 following successful completion of the casing integrity testing. The liner was set at 1486 to 570 feet with 480 feet of overlap inside the production casing. We believe open hole to be present below 1486 feet but could not get the liner to pass this depth.

Mr. Dade will receive two originals at his office in Artesia. Thank you very much for your assistance in the development of this important energy project. Should you have questions regarding this sundry notice please do not hesitate to contact me by email at David.Janney@amec.com or by phone at (505) 821-1801.

Respectfully submitted,

David W. Janney, PG
Agent for Lightning Dock Geothermal HI-01, LLC

Cc: Mr. Randy Dade – NMOCD Artesia
Mr. Chuck Smiley – Lightning Dock Geothermal HI-01, LLC
Ms. Michelle Henrie – Attorney for Lightning Dock Geothermal HI-01, LLC

Attachments

One (1) Form G-103 Sundry Notice for LDG 55-7

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Fee ☐
5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit –" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☐ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☑
7. Unit Agreement Name:
2. Name of Operator: Lightning Dock Geothermal HI-01, LLC
8. Farm or Lease Name: Federal NM34790
3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101
9. Well No.: LDG 55-7
4. Location of Well: Unit Letter J 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.
10. Field and Pool, or Wildcat: Lightning Dock Geothermal
15. Elevation (Show whether DF, RT, GR, etc.): 4198 GR
12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐			COMMENCE DRILLING OPNS.	☐	PLUG & ABANDONMENT	☐
PULL OR ALTER CASING	☐	CHANGE PLANS	☐	CASING TEST AND CEMENT JOB	☐		
OTHER	☐			OTHER Well clean out and liner setting	☑		

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.

Well cleanout and running slotted liner.

Well clean out was performed to a depth of 2349 feet between October 14 and 18, 2013.
Slotted liner was intended to be run to the total depth of 2349 feet. Due to tight hole at 1516 feet, slotted liner was only able to be run into the wellbore to a depth of 1486 feet. Open well bore occurs from 1486 feet to 2349 feet.

Liner overlap in the production casing was intended to be 100 feet. Liner over lap is now from 570 feet to 1050 feet.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W. Ramey, PG TITLE Agent for Lightning Dock Geothermal HI-01, LLC DATE 11/8/2013

APPROVED BY Carl J. Chavez TITLE Environmental Engineer DATE 12/17/2013

July 8, 2013 Project 1151700102

Mr. Randy Dade
District 2 Supervisor
New Mexico Oil Conservation Division
811 South First Street
Artesia, NM 88210
575-748-1283
Randy.Dade@state.nm.us

RE: Sundry Notice Form G-103 for Geothermal Production Well LDG 55-7 for Los Lobos Renewable Power, LLC, Section 7, Twp. 25S, Rng. 19W, Hidalgo County, New Mexico

Dear Mr. Dade:

On behalf of Los Lobos Renewable Power, LLC, AMEC Environment & Infrastructure respectfully submits the attached Sundry Notice for the cleanout and completion of LDG 55-7. LDG 55-7 is located on federal geothermal lease NM 34790 in Hidalgo County, New Mexico. There is one original and one copy of the form included in this submittal. Mr. Carl Chavez will also receive an original at his office in Santa Fe. AMEC will also submit a Sundry Notice for this work to Mr. Patrick Moran with the Bureau of Land Management in Las Cruces, New Mexico and an equivalent type of form will be submitted to Mr. Martin McMillan with the New Mexico Office of the State Engineer in Deming.

Thank you very much for your assistance in the development of this important energy project. Should you have questions regarding these applications, please do not hesitate to contact me by email at David.Janney@amec.com or by phone at (505) 821-1801.

Respectfully submitted,

David W. Janney, PG
Agent for Los Lobos Renewable Power, LLC

Cc: Mr. Carl Chavez – NMOCD Santa Fe
Mr. Chuck Smiley – Los Lobos Renewable Power, LLC (Lightning Dock Geothermal HI-01, LLC)
Ms. Michelle Henrie – Attorney for Los Lobos Renewable Power, LLC

Attachments

Two (2) Forms G-103 Sundry Notice for LDG 55-7
Two (2) Cleanout & Completion program for LDG 55-7 by Capuano Engineering Consultants

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-78
Revised 10-1-78

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SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Fee ☐
5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☑ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☐
7. Unit Agreement Name:
2. Name of Operator: Los Lobos Renewable Power, LLC
8. Farm or Lease Name:
3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101
9. Well No.: LDG 55-7
4. Location of Well: Unit Letter K 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.
10. Field and Pool, or Wildcat: Lightning Dock Geothermal
15. Elevation (Show whether DF, RT, GR, etc.): 4201 GR
12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG & ABANDONMENT ☐
LL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER Cleanout well and run slotted liner ☑		OTHER ☐	

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.

Move on location and rig-up drilling rig.
Cleanout well to existing depth of 2,349 feet.
Run slotted liner with 100 feet of overlap to 2,349 feet.
Close master valve, rig-down, and move off location.

Please see attached LDG 55-7 Cleanout & Completion Program by Capuano Engineering Consultants for the details of this program.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W. Jaroszy, PG TITLE Agent for Los Lobos Renewable Power, LLC DATE July 8, 2013

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

CyrQ

Lightning Dock
geothermal

LDG 55-7 Cleanout and Completion Program

Designed and Prepared By:

CAPUANO ENGINEERING CONSULTANTS

3883 Airway Drive
Suite 210
Santa Rosa, CA 95403
TELEPHONE: (707) 575-8740

Cyrq – Lightning Dock Geothermal Cleanout and Completion Program LDG 55-7

Drilling Program	
Operating Company	Cyrq – Los Lobos Renewable Power, LLC
Field	Lightning Dock
Well	LDG 55-7
Location	Sec 7 Twp 25 S R 19 W: Hidalgo County, NM
Well Type	Production Well
Drilling Engineer	Louis Capuano III
Date of Issue	July 8, 2013

		Signature	**Date**
Prepared	Louis Capuano III		
	Drilling Engineer	Capuano Engineering Consultants	

Table of Contents

Section:

Cyrq – Lightning Dock Geothermal
Cleanout and Completion Program
LDG 55-7

Section A: General Well Information

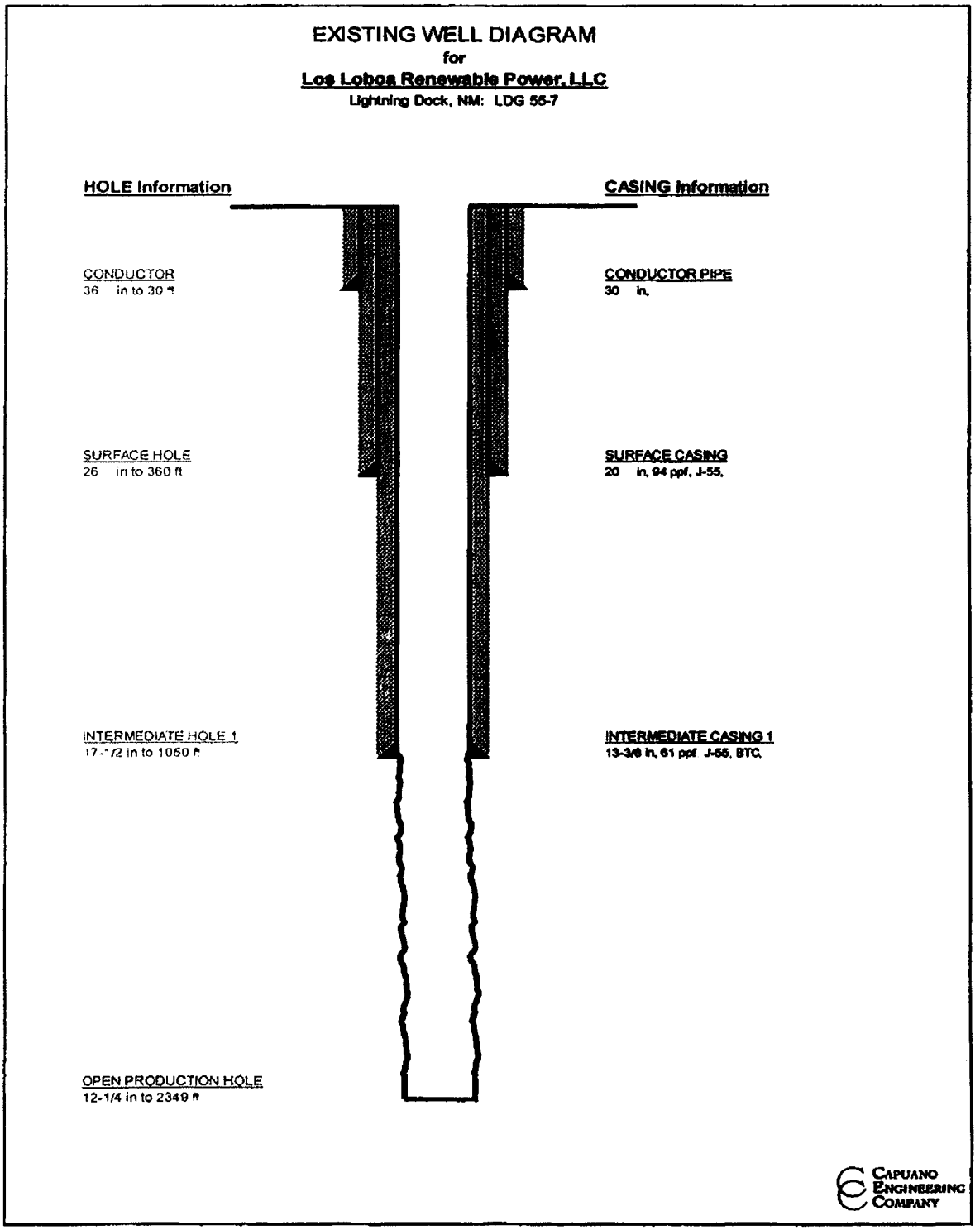
Well Information Table	
Los Lobos Renewable Power, LLC	LDG 55-7
Location	Section: 7, Township: 25S, Range: 19W County: Hidalgo County State: NM
Elevation	GL: 4208'
	Original KB: 15'
Original 1985 Total Depth	7001' MD
2010 Re-Opening Depth	2349' MD
Surface LAT/LONG	LAT = 32.144311 deg LONG = -108.835941

Section	Maximum Depth of Section		Casing
OH	MD	TVD	
36"	30'	30'	30", 135 ppf, J-55 BTC Casing
26"	360'	360'	20", 94 ppf, J-55, BTC
17-1/2"	1050'	1050'	13-3/8", 61 ppf, J-55, BTC Casing
12-1/4"	2349'	2349'	Open Hole

Wellhead Information	
Flange Size	Pressure Test (psi)
13-3/8" SOW x 12" ANSI 400 Series with two 2" LP outlets.	250 / 1000
12" 300 FE RTJ slab gate valve.	250 / 1000

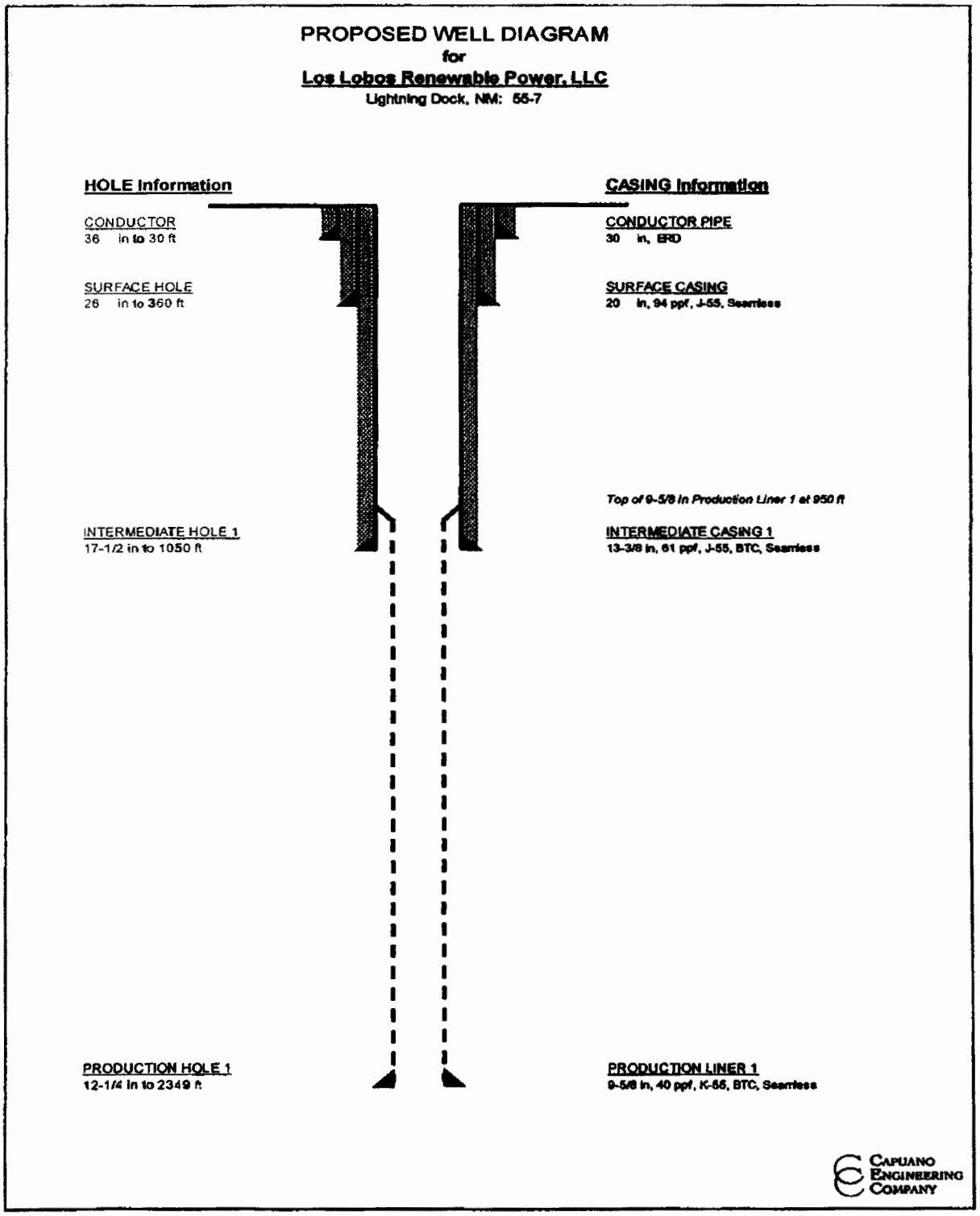
Cyrq – Lightning Dock Geothermal
Cleanout and Completion Program
LDG 55-7

Existing Wellbore Schematic:



Cyrq – Lightning Dock Geothermal
Cleanout and Completion Program
LDG 55-7

Proposed Wellbore Schematic:



Section B: Cleanout and Completion Program

Safety / Hazards Considerations in This Section:
During the cleanout and completion program, it is imperative to maintain a steady water supply to the rig. The well has shown signs of temperature and artesian flow. During all operations while the well is open, a steady flow of cool water will be introduced to the wellbore at a rate of approximately 10 gallons per minute. This will ensure that the flow from geothermal formations will stay killed. The fresh water will be supplied by fresh water well LDG 14-7. All clean out and subsequent procedure will utilize fresh water to ensure that no formation damage is incurred on the reservoir. Bentonite or clay-like products will not be used during the clean-out and completion program. All cuttings will be managed and disposed of properly.

Bit & Hydraulics Program		Mud Program	
Bit Type	12-1/4" Tri-cone	Mud Weight	8.33 ppg
Nozzles	3 x 20,	Mud Type	Fresh Water
IADC Code	3-1-5 to 4-2-7	Fluid Loss	N/A
RPM	60 – 80 RPM	YP	N/A
Pump Rate	400 – 700 gpm	PH	N/A
Run a maximum of 40,000 lbs of WOB. An average of 20,000 lbs to 30,000 lbs will suffice.			
12-1/4" BHA	12-1/4" Bit, Bit Sub, 2 x 8" DC, 8" Jar, 4 x 8" DC, XO, drill pipe.		

Procedure:

1. Move in and rig up on well.
   1.1. Nipple up BOP stack on wellhead.
   1.2. Move in water tank and fill.
2. Pick up and make up 12-1/4" Bottom Hole Assembly.
3. Run into well with assembly and drill pipe.
4. Tag bridge at approximately 1341'.
5. Pull up 5 ft and begin circulating water.
6. Begin rotation of bit at 70 rpm.
7. Tag and begin to drill out bridge.
   7.1. Continue to drill out bridge until clear open hole is reached or well TD is tagged at 2349'.
8. At section TD circulate, make a wiper trip to the 13-3/8" casing shoe and POOH.

8.1. Circulate and pull out of the hole.

8.2. Strap drill pipe, tools and collars to ensure hole depth.

9. Run 9-5/8", 40 ppf, K-55, BTC Slotted liner on a 13-3/8" x 9-5/8" liner adapter.

9.1. Plan liner for a 100' liner lap.

9.2. Lower four joints and upper four joints of the liner will be blank.

9.3. Equip liner with a guide shoe.

9.4. Weld the bottom four joints of casing.

9.5. Run liner in the hole on drill pipe.

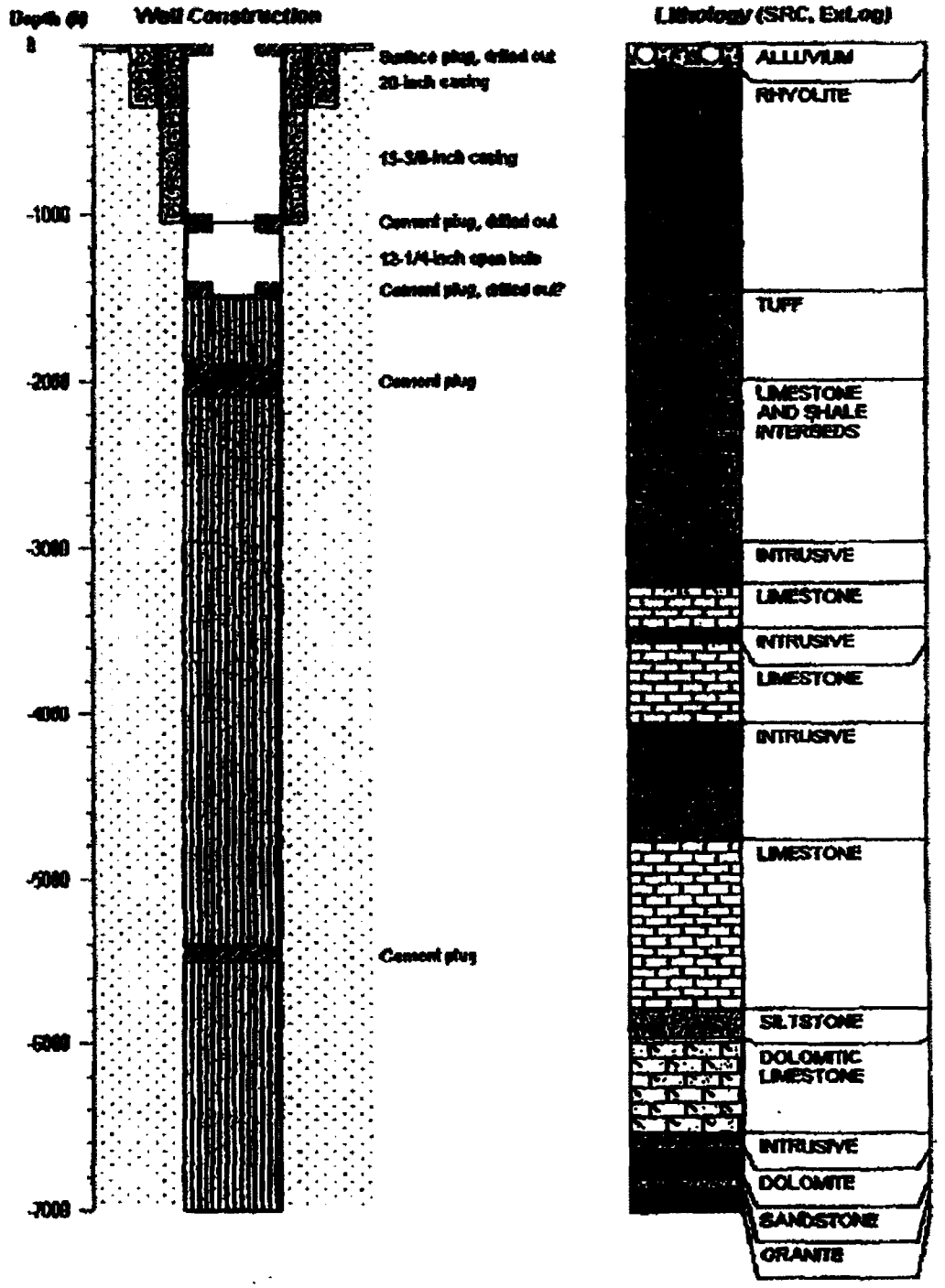
9.6. Tag bottom.

10. Release from liner adapter.

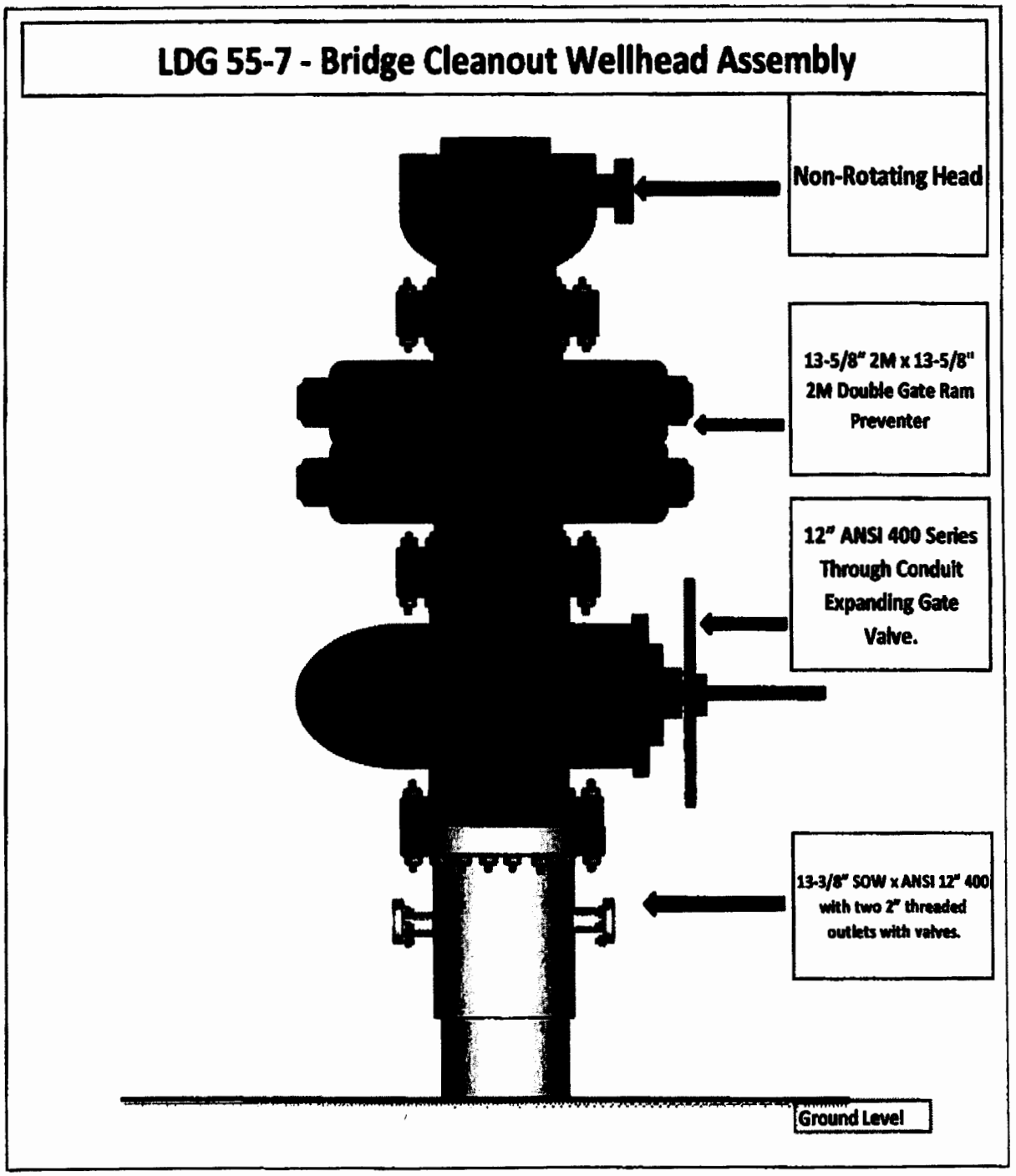
11. Pull out of the hole with tool and drill pipe.

12. Close master valve and rig down.

Section C: Lithology



Section C: BOP Diagram



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 16, 2013

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal Water Quality Monitoring OrderNo.: 1312055

Dear David Janney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/2/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001 **Matrix:** AQUEOUS **Received Date:** 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1221	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1232	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1242	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1248	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1254	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1260	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Surr: Decachlorobiphenyl	88.4	17-123		%REC	1	12/8/2013 2:05:14 PM	10640
Surr: Tetrachloro-m-xylene	74.0	22.6-113		%REC	1	12/8/2013 2:05:14 PM	10640
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/9/2013 7:15:48 PM	10641
1-Methylnaphthalene	ND	2.0		µg/L	1	12/9/2013 7:15:48 PM	10641
2-Methylnaphthalene	ND	2.0		µg/L	1	12/9/2013 7:15:48 PM	10641
Acenaphthylene	ND	2.5		µg/L	1	12/9/2013 7:15:48 PM	10641
Acenaphthene	ND	5.0		µg/L	1	12/9/2013 7:15:48 PM	10641
Fluorene	ND	0.80		µg/L	1	12/9/2013 7:15:48 PM	10641
Phenanthrene	0.65	0.60		µg/L	1	12/9/2013 7:15:48 PM	10641
Anthracene	ND	0.60		µg/L	1	12/9/2013 7:15:48 PM	10641
Fluoranthene	ND	0.30		µg/L	1	12/9/2013 7:15:48 PM	10641
Pyrene	0.71	0.30		µg/L	1	12/9/2013 7:15:48 PM	10641
Benz(a)anthracene	ND	0.070		µg/L	1	12/9/2013 7:15:48 PM	10641
Chrysene	ND	0.20		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(a)pyrene	ND	0.070		µg/L	1	12/9/2013 7:15:48 PM	10641
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/9/2013 7:15:48 PM	10641
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/9/2013 7:15:48 PM	10641
Surr: Benzo(e)pyrene	64.1	24.5-139		%REC	1	12/9/2013 7:15:48 PM	10641
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	9.5	2.0	*	mg/L	20	12/3/2013 5:28:52 PM	R15216
Chloride	140	10		mg/L	20	12/3/2013 5:28:52 PM	R15216
Bromide	0.46	0.10		mg/L	1	12/3/2013 4:51:39 PM	R15216
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/3/2013 4:51:39 PM	R15216
Sulfate	630	10	*	mg/L	20	12/3/2013 5:28:52 PM	R15216
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/4/2013 10:52:14 PM	R15288
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.080	0.020		mg/L	1	12/3/2013 7:04:41 PM	R15213

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001
Matrix: AQUEOUS
Received Date: 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Barium	0.094	0.0020		mg/L	1	12/3/2013 7:04:41 PM	R15213
Boron	0.65	0.040		mg/L	1	12/3/2013 7:04:41 PM	R15213
Cadmium	ND	0.0020		mg/L	1	12/3/2013 7:04:41 PM	R15213
Calcium	48	1.0		mg/L	1	12/3/2013 7:04:41 PM	R15213
Chromium	ND	0.0060		mg/L	1	12/3/2013 7:04:41 PM	R15213
Cobalt	ND	0.0060		mg/L	1	12/3/2013 7:04:41 PM	R15213
Copper	ND	0.0060		mg/L	1	12/3/2013 7:04:41 PM	R15213
Iron	0.40	0.020	*	mg/L	1	12/3/2013 7:04:41 PM	R15213
Magnesium	ND	1.0		mg/L	1	12/3/2013 7:04:41 PM	R15213
Manganese	0.13	0.0020	*	mg/L	1	12/3/2013 7:04:41 PM	R15213
Molybdenum	0.046	0.0080		mg/L	1	12/3/2013 7:04:41 PM	R15213
Nickel	ND	0.010		mg/L	1	12/3/2013 7:04:41 PM	R15213
Potassium	32	1.0		mg/L	1	12/3/2013 7:04:41 PM	R15213
Silver	ND	0.0050		mg/L	1	12/10/2013 11:43:56 AM	R15389
Sodium	380	5.0		mg/L	5	12/3/2013 7:06:37 PM	R15213
Zinc	ND	0.010		mg/L	1	12/3/2013 7:04:41 PM	R15213
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0074	0.0010		mg/L	1	12/9/2013 2:28:31 PM	R15360
Lead	ND	0.0010		mg/L	1	12/9/2013 12:53:57 PM	R15358
Selenium	0.0038	0.0010		mg/L	1	12/9/2013 2:28:31 PM	R15360
Uranium	ND	0.0010		mg/L	1	12/9/2013 12:53:57 PM	R15358
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/8/2013 5:08:28 PM	10693
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Acenaphthylene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Aniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Anthracene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Azobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benz(a)anthracene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(a)pyrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(b)fluoranthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(k)fluoranthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzoic acid	ND	40		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzyl alcohol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001 **Matrix:** AQUEOUS **Received Date:** 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Bis(2-chloroiscpropyl)ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Butyl benzyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Carbazole	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Chloroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Chloronaphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Chlorophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Chrysene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Di-n-butyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Di-n-octyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Dibenzofuran	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,2-Dichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,3-Dichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,4-Dichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Diethyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Dimethyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dichlorophenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dimethylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dinitrophenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dinitrotoluene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,6-Dinitrotoluene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Fluoranthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Fluorene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachlorobutadiene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachloroethane	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Isophorone	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1-Methylnaphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Methylnaphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Methylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
3+4-Methylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001
Matrix: AQUEOUS
Received Date: 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
N-Nitrosodimethylamine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Naphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Nitroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
3-Nitroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Nitroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Nitrobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Nitrophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Nitrophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Pentachlorophenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
Phenanthrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Phenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Pyrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Pyridine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Surr: 2-Fluorophenol	48.5	22.7-98		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: Phenol-d5	38.2	23.4-74.9		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: 2,4,6-Tribromophenol	79.0	23.3-111		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: Nitrobenzene-d5	68.9	36.8-111		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: 2-Fluorobiphenyl	73.7	38.3-110		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: 4-Terphenyl-d14	69.0	52.1-116		%REC	1	12/4/2013 12:59:42 PM	10639
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	1.8	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Toluene	3.4	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Ethylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Naphthalene	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1-Methylnaphthalene	ND	4.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Methylnaphthalene	ND	4.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Acetone	68	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Bromobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Bromodichloromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228

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- S Spike Recovery outside accepted recovery limits
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- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Bromomethane	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Butanone	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Carbon disulfide	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Carbon Tetrachloride	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chloroethane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chloroform	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chloromethane	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Chlorotoluene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
4-Chlorotoluene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
cis-1,2-DCE	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Dibromochloromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Dibromomethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1-Dichloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1-Dichloroethene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dichloropropane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,3-Dichloropropane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2,2-Dichloropropane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1-Dichloropropene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Hexachlorobutadiene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Hexanone	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Isopropylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
4-Isopropyltoluene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
4-Methyl-2-pentanone	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Methylene Chloride	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
n-Butylbenzene	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
n-Propylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
sec-Butylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Styrene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
tert-Butylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001
Matrix: AQUEOUS
Received Date: 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
trans-1,2-DCE	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Trichlorofluoromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Vinyl chloride	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Xylenes, Total	ND	1.5		µg/L	1	12/4/2013 6:48:43 PM	R15228
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
Surr: 4-Bromofluorobenzene	99.1	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
Surr: Dibromofluoromethane	102	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
Surr: Toluene-d8	100	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	12/3/2013	10616
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	25	2.5		µg/L	1	12/9/2013	10711
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2100	0.010		µmhos/cm	1	12/3/2013 7:58:15 PM	R15223
SM4500-H+B: PH						Analyst: **JML**	
pH	6.89	1.68	H	pH units	1	12/3/2013 7:58:15 PM	R15223
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	120	20		mg/L CaCO3	1	12/3/2013 7:58:15 PM	R15223
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/3/2013 7:58:15 PM	R15223
Total Alkalinity (as CaCO3)	120	20		mg/L CaCO3	1	12/3/2013 7:58:15 PM	R15223
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	842	40.0	*	mg/L	1	12/5/2013 4:51:00 PM	10626

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

Qualifiers:

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

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120140-001
Client Sample ID: 1312055-001H LDG 55-7

Report Date: 12/13/13
Collection Date: 11/27/13 15:00
DateReceived: 12/04/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.8	mg/L		0.1		E200.7	12/09/13 18:40 / eli-b
Rubidium	0.3	mg/L		0.1		E200.8	12/13/13 10:50 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:50 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120140-002
Client Sample ID: 1312055-001J LDG 55-7

Report Date: 12/13/13
Collection Date: 11/27/13 15:00
DateReceived: 12/04/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Phosphorus, Total as P	0.057	mg/L		0.005		E365.1	12/12/13 10:26 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13120140

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: SUB-B216225	
Sample ID: ICV		Continuing Calibration Verification Standard							12/09/13 11:35	
Lithium		1.29	mg/L	0.10	103	95	105			
Sample ID: ICSA		Interference Check Sample A							12/09/13 11:47	
Lithium		-0.00206	mg/L	0.10						
Sample ID: ICSAB		Interference Check Sample AB							12/09/13 11:51	
Lithium		1.01	mg/L	0.10	101	80	120			
Method: E200.7									Batch: B_R216225	
Sample ID: MB-6500DIS131209A		Method Blank				Run: SUB-B216225			12/09/13 11:59	
Lithium		ND	mg/L	0.0003						
Sample ID: LFB-6500DIS131209A		Laboratory Fortified Blank				Run: SUB-B216225			12/09/13 12:03	
Lithium		1.00	mg/L	0.10	100	85	115			
Sample ID: B13120529-002BMS2		Sample Matrix Spike				Run: SUB-B216225			12/09/13 18:29	
Lithium		2.0	mg/L	0.10	100	70	130			
Sample ID: B13120529-002BMSD2		Sample Matrix Spike Duplicate				Run: SUB-B216225			12/09/13 18:33	
Lithium		2.0	mg/L	0.10	99	70	130	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13120140

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B216493	
Sample ID: QCS	2	Initial Calibration Verification Standard							12/13/13 09:32	
Rubidium		0.0533	mg/L	0.010	107	90	110			
Tungsten		0.0534	mg/L	0.10	107	90	110			
Method: E200.8									Batch: B_R216493	
Sample ID: LFB	2	Laboratory Fortified Blank				Run: SUB-B216493			12/13/13 09:34	
Rubidium		0.0476	mg/L	0.010	95	85	115			
Tungsten		0.0487	mg/L	0.10	97	85	115			
Sample ID: LRB	2	Method Blank				Run: SUB-B216493			12/13/13 09:56	
Rubidium		0.03								
Tungsten		1.0								
Sample ID: B13120270-001CMS	2	Sample Matrix Spike				Run: SUB-B216493			12/13/13 10:52	
Rubidium		0.713	mg/L	0.010		70	130			A
Tungsten		0.113	mg/L	0.10	120	70	130			
Sample ID: B13120270-001CMSD	2	Sample Matrix Spike Duplicate				Run: SUB-B216493			12/13/13 10:54	
Rubidium		0.715	mg/L	0.010		70	130	0.3	20	A
Tungsten		0.113	mg/L	0.10	120	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 12/13/13
Work Order: C13120140

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E365.1									Analytical Run: SUB-B216417	
Sample ID: ICV		Initial Calibration Verification Standard							12/12/13 09:56	
Phosphorus, Total as P		0.258	mg/L	0.0050	103	90	110			
Method: E365.1									Batch: B_76392	
Sample ID: MB-76392		Method Blank				Run: SUB-B216417			12/12/13 09:57	
Phosphorus, Total as P		ND	mg/L	0.004						
Sample ID: LCS-76392		Laboratory Control Sample				Run: SUB-B216417			12/12/13 09:58	
Phosphorus, Total as P		0.208	mg/L	0.0050	104	90	110			
Sample ID: B13120329-001BMS		Sample Matrix Spike				Run: SUB-B216417			12/12/13 10:11	
Phosphorus, Total as P		0.255	mg/L	0.0050	104	90	110			
Sample ID: B13120329-001BMSD		Sample Matrix Spike Duplicate				Run: SUB-B216417			12/12/13 10:12	
Phosphorus, Total as P		0.255	mg/L	0.0050	104	90	110	0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT

WO#: **1312055**

all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15213**	RunNo: **15213**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438573** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

ample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15213**	RunNo: **15213**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438574** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	111	85	115			
Barium	0.50	0.0020	0.5000	0	100	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.7	85	115			
Copper	0.49	0.0060	0.5000	0	97.8	85	115			
Iron	0.52	0.020	0.5000	0	104	85	115			
Magnesium	50	1.0	50.00	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.49	0.010	0.5000	0	99.0	85	115			
Potassium	49	1.0	50.00	0	98.4	85	115			
Sodium	49	1.0	50.00	0	98.6	85	115			
Zinc	0.50	0.010	0.5000	0	99.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15389**	RunNo: **15389**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15389**	RunNo: **15389**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443343** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.088	0.0050	0.1000	0	87.6	85	115			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R15358	RunNo:	15358					
Prep Date:		Analysis Date:	12/9/2013	SeqNo:	442393	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	96.9	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R15358	RunNo:	15358					
Prep Date:		Analysis Date:	12/9/2013	SeqNo:	442394	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	97.3	85	115			
Uranium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R15358	RunNo:	15358					
Prep Date:		Analysis Date:	12/9/2013	SeqNo:	442395	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
`d	ND	0.0010								
.nium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R15358	RunNo:	15358					
Prep Date:		Analysis Date:	12/9/2013	SeqNo:	442396	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R15360	RunNo:	15360					
Prep Date:		Analysis Date:	12/9/2013	SeqNo:	442459	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			
Selenium	0.024	0.0010	0.02500	0	94.6	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R15360	RunNo:	15360					
Prep Date:		Analysis Date:	12/9/2013	SeqNo:	442460	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15360**	RunNo: **15360**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442460** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10693**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **10693**	RunNo: **15327**
Prep Date: **12/7/2013**	Analysis Date: **12/8/2013**	SeqNo: **441675** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-10693**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **10693**	RunNo: **15327**
Prep Date: **12/7/2013**	Analysis Date: **12/8/2013**	SeqNo: **441676** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	1312055-001EMS	SampType:	MS		TestCode:	EPA Method 300.0: Anions				
Client ID:	LDG 55-7	Batch ID:	R15216		RunNo:	15216				
Prep Date:		Analysis Date:	12/3/2013		SeqNo:	438864	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.9	0.10	2.500	0.4605	97.9	92	104			

Sample ID	1312055-001EMSD	SampType:	MSD		TestCode:	EPA Method 300.0: Anions				
Client ID:	LDG 55-7	Batch ID:	R15216		RunNo:	15216				
Prep Date:		Analysis Date:	12/3/2013		SeqNo:	438865	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.9	0.10	2.500	0.4605	97.0	92	104	0.787	20	

Sample ID	A6	SampType:	CCV_6		TestCode:	EPA Method 300.0: Anions				
Client ID:	BatchQC	Batch ID:	R15216		RunNo:	15216				
Prep Date:		Analysis Date:	12/3/2013		SeqNo:	438867	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	2.400	0	100	90	110			
Chloride	12	0.50	12.00	0	102	90	110			
Bromide	12	0.10	12.00	0	102	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	99.8	90	110			
Sulfate	31	0.50	30.00	0	103	90	110			

Sample ID	A4	SampType:	CCV_4		TestCode:	EPA Method 300.0: Anions				
Client ID:	BatchQC	Batch ID:	R15216		RunNo:	15216				
Prep Date:		Analysis Date:	12/3/2013		SeqNo:	438879	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.96	0.10	1.000	0	96.1	90	110			
Chloride	4.7	0.50	5.000	0	93.3	90	110			
Bromide	4.9	0.10	5.000	0	97.8	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	90	110			
Sulfate	12	0.50	12.50	0	94.9	90	110			

Sample ID	A5	SampType:	CCV_5		TestCode:	EPA Method 300.0: Anions				
Client ID:	BatchQC	Batch ID:	R15216		RunNo:	15216				
Prep Date:		Analysis Date:	12/3/2013		SeqNo:	438891	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	1.600	0	96.6	90	110			
Chloride	7.7	0.50	8.000	0	96.5	90	110			
Bromide	7.9	0.10	8.000	0	99.3	90	110			
Phosphorus, Orthophosphate (As P	7.6	0.50	8.000	0	95.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15216**	RunNo: **15216**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	97.9	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15216**	RunNo: **15216**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **438903** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.94	0.10	1.000	0	94.5	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Bromide	4.8	0.10	5.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	90	110			
Sulfate	12	0.50	12.50	0	94.3	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440664** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.4	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440676** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440688** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440700** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.9	90	110			

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440707**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	99.9	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440711**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440712**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440713**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.5	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440722**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10616**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**							
Client ID: **PBW**	Batch ID: **10616**	RunNo: **15202**							
Prep Date: **12/3/2013**	Analysis Date: **12/3/2013**	SeqNo: **438249**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10616**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**							
Client ID: **LCSW**	Batch ID: **10616**	RunNo: **15202**							
Prep Date: **12/3/2013**	Analysis Date: **12/3/2013**	SeqNo: **438250**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	92.4	80	120			

Sample ID **LCSD-10616**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**							
Client ID: **LCSS02**	Batch ID: **10616**	RunNo: **15202**							
Prep Date: **12/3/2013**	Analysis Date: **12/3/2013**	SeqNo: **438251**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	91.2	80	120	1.31	20	

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10640**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.4		2.500		97.6	17	123			
Surr: Tetrachloro-m-xylene	2.2		2.500		86.0	22.6	113			

Sample ID **LCS-10640**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.5	1.0	5.000	0	69.6	18.6	134			
Aroclor 1260	4.7	1.0	5.000	0	94.8	35.7	137			
Surr: Decachlorobiphenyl	2.2		2.500		88.0	17	123			
Surr: Tetrachloro-m-xylene	2.0		2.500		78.0	22.6	113			

Sample ID **1312055-001LMS**	SampType: **MS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LDG 55-7**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441776** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.7	1.0	5.000	0	74.4	70	130			
Aroclor 1260	3.0	1.0	5.000	0	60.6	61.1	129			S
Surr: Decachlorobiphenyl	1.9		2.500		77.6	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		66.0	22.6	113			

Sample ID **1312055-001LMSD**	SampType: **MSD**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LDG 55-7**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441777** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.9	1.0	5.000	0	77.5	70	130	4.03	20	
Aroclor 1260	3.2	1.0	5.000	0	64.0	61.1	129	5.52	12.9	
Surr: Decachlorobiphenyl	2.1		2.500		83.2	17	123	0	0	
Surr: Tetrachloro-m-xylene	1.8		2.500		70.0	22.6	113	0	0	

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15195**	RunNo: **15195**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438387** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.8	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15195**	RunNo: **15195**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438389** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		99.5	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439397** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439397** Units: **µg/L**

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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439397** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130			
Surr: Toluene-d8	9.7		10.00		96.6	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439399** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
ıene	19	1.0	20.00	0	97.3	82.2	124			
.orobenzene	18	1.0	20.00	0	92.3	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	109	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	87.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.2	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10639**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10639**	RunNo: **15239**
Prep Date: **12/4/2013**	Analysis Date: **12/4/2013**	SeqNo: **439467** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10639**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10639**	RunNo: **15239**
Prep Date: **12/4/2013**	Analysis Date: **12/4/2013**	SeqNo: **439467** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
hthalene	ND	10								
Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		59.1	22.7	98			
Surr: Phenol-d5	89		200.0		44.5	23.4	74.9			
Surr: 2,4,6-Tribromophenol	170		200.0		82.6	23.3	111			
Surr: Nitrobenzene-d5	76		100.0		76.5	36.8	111			
Surr: 2-Fluorobiphenyl	77		100.0		76.5	38.3	110			
Surr: 4-Terphenyl-d14	88		100.0		88.1	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcs-10639**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10639**	RunNo: **15239**
Prep Date: **12/4/2013**	Analysis Date: **12/4/2013**	SeqNo: **439468** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	88.2	48	101			
4-Chloro-3-methylphenol	170	10	200.0	0	84.2	47.9	109			
2-Chlorophenol	160	10	200.0	0	80.9	40	105			
1,4-Dichlorobenzene	77	10	100.0	0	77.2	40.8	94.3			
2,4-Dinitrotoluene	80	10	100.0	0	79.7	28.3	131			
N-Nitrosodi-n-propylamine	87	10	100.0	0	87.1	46.2	119			
4-Nitrophenol	86	10	200.0	0	42.9	10.5	67.9			
Pentachlorophenol	120	20	200.0	0	61.1	22.4	81.1			
Phenol	97	10	200.0	0	48.7	21.4	72.9			
Pyrene	79	10	100.0	0	79.4	46.9	109			
1,2,4-Trichlorobenzene	76	10	100.0	0	76.5	43.1	98.4			
Surr: 2-Fluorophenol	110		200.0		57.4	22.7	98			
Surr: Phenol-d5	96		200.0		47.8	23.4	74.9			
Surr: 2,4,6-Tribromophenol	180		200.0		90.0	23.3	111			
Surr: Nitrobenzene-d5	77		100.0		77.0	36.8	111			
Surr: 2-Fluorobiphenyl	80		100.0		79.7	38.3	110			
Surr: 4-Terphenyl-d14	92		100.0		91.9	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS-10641**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10641**	RunNo: **15357**
Prep Date: **12/4/2013**	Analysis Date: **12/9/2013**	SeqNo: **442493** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	52	2.0	80.00	0	64.9	43.8	96.9			
1-Methylnaphthalene	37	2.0	80.20	0	46.1	41.3	87.3			
2-Methylnaphthalene	33	2.0	80.00	0	41.2	36.6	89.6			
Acenaphthylene	52	2.5	80.20	0	64.2	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.0	42.4	87.6			
Fluorene	4.0	0.80	8.020	0	49.6	40.5	93.6			
Phenanthrene	2.6	0.60	4.020	0	63.4	43.9	111			
Anthracene	2.6	0.60	4.020	0	64.4	44.3	103			
Fluoranthene	5.4	0.30	8.020	0	68.0	43.5	109			
Pyrene	5.2	0.30	8.020	0	64.5	32.6	103			
Benz(a)anthracene	0.48	0.070	0.8020	0	59.9	43	114			
Chrysene	2.4	0.20	4.020	0	59.7	40.2	100			
Benzo(b)fluoranthene	0.65	0.10	1.002	0	64.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			
Benzo(a)pyrene	0.29	0.070	0.5020	0	57.8	34.5	118			
Dibenz(a,h)anthracene	0.62	0.12	1.002	0	61.9	38.3	107			
Benzo(g,h,i)perylene	0.54	0.12	1.000	0	54.0	38.4	110			
ɔno(1,2,3-cd)pyrene	1.4	0.25	2.004	0	72.4	42.4	113			
Surr: Benzo(e)pyrene	24		20.00		121	24.5	139			

Sample ID **MB-10641**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10641**	RunNo: **15357**
Prep Date: **12/4/2013**	Analysis Date: **12/9/2013**	SeqNo: **442494** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10641**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10641**	RunNo: **15357**
Prep Date: **12/4/2013**	Analysis Date: **12/9/2013**	SeqNo: **442494** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	17		20.00		86.4	24.5	139			

Sample ID **1312055-001CMS**	SampType: **MS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LDG 55-7**	Batch ID: **10641**	RunNo: **15357**
Prep Date: **12/4/2013**	Analysis Date: **12/9/2013**	SeqNo: **442956** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	1.140	52.4	70	130			S
1-Methylnaphthalene	31	2.0	80.20	0	38.1	70	130			S
2-Methylnaphthalene	28	2.0	80.00	0	35.6	70	130			S
Acenaphthylene	65	2.5	80.20	10.28	68.8	70	130			S
Acenaphthene	30	5.0	80.00	0	37.4	70	130			S
Fluorene	3.5	0.80	8.020	0	43.4	70	130			S
Phenanthrene	2.8	0.60	4.020	0.6500	53.7	70	130			S
Anthracene	2.1	0.60	4.020	0	53.0	70	130			S
Fluoranthene	4.3	0.30	8.020	0	53.6	70	130			S
Pyrene	4.4	0.30	8.020	0.7100	46.5	70	130			S
Benz(a)anthracene	0.39	0.070	0.8020	0	48.6	70	130			S
Chrysene	2.0	0.20	4.020	0.08000	46.8	70	130			S
Benzo(b)fluoranthene	0.48	0.10	1.002	0	47.9	70	130			S
Benzo(k)fluoranthene	0.22	0.070	0.5000	0	44.0	70	130			S
Benzo(a)pyrene	0.24	0.070	0.5020	0	47.8	70	130			S
Dibenz(a,h)anthracene	0.50	0.12	1.002	0	49.9	70	130			S
Benzo(g,h,i)perylene	0.90	0.12	1.000	0.4400	46.0	70	130			S
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0.1000	52.4	70	130			S
Surr: Benzo(e)pyrene	13		20.00		67.2	24.5	139			

Sample ID **1312055-001CMSD**	SampType: **MSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LDG 55-7**	Batch ID: **10641**	RunNo: **15357**
Prep Date: **12/4/2013**	Analysis Date: **12/9/2013**	SeqNo: **442957** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	46	2.0	80.00	1.140	56.3	70	130	7.02	20	S
1-Methylnaphthalene	32	2.0	80.20	0	39.3	70	130	3.13	20	S
2-Methylnaphthalene	28	2.0	80.00	0	35.5	70	130	0.457	20	S
Acenaphthylene	72	2.5	80.20	10.28	77.3	70	130	9.95	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1312055-001CMSD** SampType: **MSD** TestCode: **EPA Method 8310: PAHs**

Client ID: **LDG 55-7** Batch ID: **10641** RunNo: **15357**

Prep Date: **12/4/2013** Analysis Date: **12/9/2013** SeqNo: **442957** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	31	5.0	80.00	0	38.3	70	130	2.18	20	S
Fluorene	3.6	0.80	8.020	0	45.3	70	130	4.22	20	S
Phenanthrene	3.0	0.60	4.020	0.6500	57.2	70	130	4.86	20	S
Anthracene	2.2	0.60	4.020	0	55.7	70	130	5.03	20	S
Fluoranthene	4.5	0.30	8.020	0	55.7	70	130	3.88	20	S
Pyrene	4.7	0.30	8.020	0.7100	49.3	70	130	4.84	20	S
Benz(a)anthracene	0.42	0.070	0.8020	0	52.4	70	130	7.41	20	S
Chrysene	2.1	0.20	4.020	0.08000	50.5	70	130	7.37	20	S
Benzo(b)fluoranthene	0.52	0.10	1.002	0	51.9	70	130	8.00	20	S
Benzo(k)fluoranthene	0.25	0.070	0.5000	0	50.0	70	130	12.8	20	S
Benzo(a)pyrene	0.27	0.070	0.5020	0	53.8	70	130	11.8	20	S
Dibenz(a,h)anthracene	0.54	0.12	1.002	0	53.9	70	130	7.69	20	S
Benzo(g,h,i)perylene	1.2	0.12	1.000	0.4400	71.0	70	130	24.4	20	R
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0.1000	57.4	70	130	8.33	20	S
Surr: Benzo(e)pyrene	14		20.00		72.4	24.5	139	0		

Qualifiers:

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- ' Analyte detected below quantitation limits
- J RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10711**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10711**	RunNo: **15336**
Prep Date: **12/9/2013**	Analysis Date: **12/9/2013**	SeqNo: **441860** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10711**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10711**	RunNo: **15336**
Prep Date: **12/9/2013**	Analysis Date: **12/9/2013**	SeqNo: **441861** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	74.1	125			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-2**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R15223**	RunNo: **15223**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **439031** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-2**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R15223**	RunNo: **15223**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **439032** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10626**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10626**	RunNo: **15274**
Prep Date: **12/3/2013**	Analysis Date: **12/5/2013**	SeqNo: **440340** 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-10626**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10626**	RunNo: **15274**
Prep Date: **12/3/2013**	Analysis Date: **12/5/2013**	SeqNo: **440341** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312055 | RcptNo: 1

Received by/date: AT 12/02/13

Logged By: Anne Thorne 12/2/2013 3:20:00 PM Anne Thorne

Completed By: Anne Thorne 12/3/2013 Anne Thorne

Reviewed By: AT 12/03/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ✔	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ✔	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ✔	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ✔	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes	No ✔	
9. Was preservative added to bottles?	Yes ✔	No ☐	NA
10. VOA vials have zero headspace?	Yes ☐	No ☐	HNO3, HNO3 No VOA Vials ✔
11. Were any sample containers received broken?	Yes ☐	No ✔	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No ☐	# of preserved bottles checked for pH: 7 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ✔	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☐	No ✔	Checked by: AT 12/03/13

Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

SAMPLE POURED OFF FOR RADON ANALYSIS-(RADON OUT OF HOLD) DISSOLVED METALS SAMPLE POURED OFF, FILTERED AND PRESERVED IN LAB/at 12/3/13

18. Cooler Information

Radon Sample broke during shipment to Sub lab; unable to analyze for Radon AT 12/04/13

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: AMEC Work Order Number: 1312055 RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Not Present			

Chain-of-Custody Record

Client: AMEC Environment & Infrastructure, Inc.

Mailing Address: 8519 Jefferson St NE ABQ, NM 87113

Phone #: (505) 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) Excel ✱ 12/06/13

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: ~~Lightning Dock~~ Lightning Dock Geothermal → water quality monitoring

Project #: 11-517-00102.05

Project Manager: David Janney

Sampler: Eric Koenig

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.1

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. 1312055	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals Plus B, Li, Ru, Hg	U (6010B/6020)	RA	Phenols	Air Bubbles (Y or N)
~~11/24/13~~			~~MW-1B~~							X		X		X		X	X	X	X	X		
11/27/13	1500	Water	LDG 55-7	(1)		-001				X	X	X		X	X	X	X	X	X	X	X	

Date: 12/2/13 Time: 15:20 Relinquished by: Eric D. Koenig Received by: _____ Date: 12/02/13 Time: 1520

Date: _____ Time: _____ Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Remarks: Metals Not Filtered or Preserved
See Attached for full analytes list. Please generate a separate report for this sample. Per INVOICE CYRQ Email 12/03/13

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

January 22, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock CYRQ ENERGY OrderNo.: 1312666

Dear David Janney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/16/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312666**
Date Reported: **1/22/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY
Lab ID: 1312666-001 **Matrix:** AQUEOUS

Client Sample ID: 53-7
Collection Date: 12/13/2013 2:00:00 PM
Received Date: 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 3011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/16/2013 9:59:38 PM	10822
EPA METHOD 8082: PCB'S							Analyst: **SCC**
Aroclor 1016	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1221	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1232	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1242	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1248	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1254	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1260	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Surr: Decachlorobiphenyl	86.0	17-123		%REC	1	12/18/2013 5:01:00 AM	10796
Surr: Tetrachloro-m-xylene	66.4	22.6-113		%REC	1	12/18/2013 5:01:00 AM	10796
EPA METHOD 8310: PAHS							Analyst: **SCC**
Naphthalene	ND	2.0		µg/L	1	12/17/2013 10:29:26 PM	10797
1-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:29:26 PM	10797
2-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:29:26 PM	10797
Acenaphthylene	ND	2.5		µg/L	1	12/17/2013 10:29:26 PM	10797
Acenaphthene	ND	5.0		µg/L	1	12/17/2013 10:29:26 PM	10797
Fluorene	ND	0.80		µg/L	1	12/17/2013 10:29:26 PM	10797
Phenanthrene	ND	0.60		µg/L	1	12/17/2013 10:29:26 PM	10797
Anthracene	ND	0.60		µg/L	1	12/17/2013 10:29:26 PM	10797
Fluoranthene	ND	0.30		µg/L	1	12/17/2013 10:29:26 PM	10797
Pyrene	ND	0.30		µg/L	1	12/17/2013 10:29:26 PM	10797
Benz(a)anthracene	ND	0.070		µg/L	1	12/17/2013 10:29:26 PM	10797
Chrysene	ND	0.20		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(a)pyrene	ND	0.070		µg/L	1	12/17/2013 10:29:26 PM	10797
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/17/2013 10:29:26 PM	10797
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/17/2013 10:29:26 PM	10797
Surr: Benzo(e)pyrene	42.4	24.5-139		%REC	1	12/17/2013 10:29:26 PM	10797
EPA METHOD 300.0: ANIONS							Analyst: **JRR**
Fluoride	1.4	0.10		mg/L	1	12/16/2013 10:09:50 PM	R15551
Chloride	33	10		mg/L	20	12/16/2013 10:22:15 PM	R15551
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/16/2013 10:09:50 PM	R15551
Sulfate	120	10		mg/L	20	12/16/2013 10:22:15 PM	R15551
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/17/2013 4:59:32 AM	R15551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	ND	0.020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Barium	0.038	0.0020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Boron	0.12	0.040		mg/L	1	12/19/2013 5:40:30 PM	R15612
Cadmium	ND	0.0020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Calcium	26	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Chromium	ND	0.0060		mg/L	1	12/19/2013 5:40:30 PM	R15612
Cobalt	ND	0.0060		mg/L	1	12/19/2013 5:40:30 PM	R15612
Copper	ND	0.0060		mg/L	1	12/19/2013 5:40:30 PM	R15612
Iron	ND	0.020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Magnesium	1.9	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Manganese	0.067	0.0020	*	mg/L	1	12/19/2013 5:40:30 PM	R15612
Molybdenum	ND	0.0080		mg/L	1	12/19/2013 5:40:30 PM	R15612
Nickel	ND	0.010		mg/L	1	12/19/2013 5:40:30 PM	R15612
Potassium	3.9	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Silver	ND	0.0050		mg/L	1	12/19/2013 5:40:30 PM	R15612
Sodium	72	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Zinc	0.049	0.010		mg/L	1	12/19/2013 5:40:30 PM	R15612
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	ND	0.0010		mg/L	1	1/6/2014 5:09:54 PM	R15909
Lead	ND	0.0010		mg/L	1	1/6/2014 5:09:54 PM	R15909
Uranium	ND	0.0010		mg/L	1	1/7/2014 6:07:19 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **IDC**	
Mercury	ND	0.00020		mg/L	1	1/3/2014 3:52:08 PM	11064
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Acenaphthylene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Aniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Anthracene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Azobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benz(a)anthracene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(a)pyrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzoic acid	ND	40		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzyl alcohol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Carbazole	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Chloroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Chloronaphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Chlorophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Chrysene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Dibenzofuran	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Diethyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Dimethyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dichlorophenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Fluoranthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Fluorene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachlorobutadiene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachloroethane	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Isophorone	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Methylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
3+4-Methylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800

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

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
N-Nitrosodimethylamine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Naphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Nitroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
3-Nitroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Nitroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Nitrobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Nitrophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Nitrophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Pentachlorophenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
Phenanthrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Phenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Pyrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Pyridine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Surr: 2-Fluorophenol	49.9	22.7-98		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: Phenol-d5	40.5	23.4-74.9		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: 2,4,6-Tribromophenol	90.1	23.3-111		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: Nitrobenzene-d5	80.1	36.8-111		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: 2-Fluorobiphenyl	95.9	38.3-110		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: 4-Terphenyl-d14	91.6	52.1-116		%REC	1	12/18/2013 10:03:31 AM	10800
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Toluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Ethylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Naphthalene	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1-Methylnaphthalene	ND	4.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Methylnaphthalene	ND	4.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Acetone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Bromobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Bromodichloromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY
Lab ID: 1312666-001 **Matrix:** AQUEOUS

Client Sample ID: 53-7
Collection Date: 12/13/2013 2:00:00 PM
Received Date: 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Bromoform	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Bromomethane	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Butanone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Carbon disulfide	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Carbon Tetrachloride	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chloroethane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chloroform	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chloromethane	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Chlorotoluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
4-Chlorotoluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
cis-1,2-DCE	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Dibromochloromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Dibromomethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1-Dichloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1-Dichloroethene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dichloropropane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,3-Dichloropropane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2,2-Dichloropropane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1-Dichloropropene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Hexachlorobutadiene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Hexanone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Isopropylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
4-Isopropyltoluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
4-Methyl-2-pentanone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Methylene Chloride	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
n-Butylbenzene	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
n-Propylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
sec-Butylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Styrene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
tert-Butylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
trans-1,2-DCE	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Trichlorofluoromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Vinyl chloride	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Xylenes, Total	ND	1.5		µg/L	1	12/16/2013 5:06:55 PM	R15529
Surr: 1,2-Dichloroethane-d4	90.1	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
Surr: 4-Bromofluorobenzene	97.4	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
Surr: Dibromofluoromethane	91.6	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
Surr: Toluene-d8	93.2	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	12/17/2013	10820
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	7.6	2.5		µg/L	1	12/19/2013	10891
SM4500-H+B: PH						Analyst: **SRM**	
pH	7.53	1.68	H	pH units	1	12/16/2013 6:15:25 PM	R15528
SM2320B: ALKALINITY						Analyst: **SRM**	
Bicarbonate (As CaCO3)	53	20		mg/L CaCO3	1	12/16/2013 6:15:25 PM	R15528
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/16/2013 6:15:25 PM	R15528
Total Alkalinity (as CaCO3)	53	20		mg/L CaCO3	1	12/16/2013 6:15:25 PM	R15528
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	321	20.0		mg/L	1	12/19/2013 8:53:00 PM	10881

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218047
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312666
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218047-001	**Sampling Date**	12/13/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312666-001K / 53-7	**Sampling Time**	2:00 PM		
Matrix	Water				
Comments	Metals samples received unfiltered and preserved with HNO3.				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Lithium	0.0887	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Rubidium	0.0127	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Tungsten	ND	mg/L	0.01	1/21/2014	ETL	EPA 200.8	

Sample Number	131218047-002	**Sampling Date**	12/13/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312666-001L / 53-7	**Sampling Time**	2:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218047
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312666
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218047-003	**Sampling Date**	12/13/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312666-001M / 53-7	**Sampling Time**	2:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	0.0131	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120621-001
Client Sample ID: 1312666-001O 53-7

Report Date: 12/23/13
Collection Date: 12/13/13 14:00
DateReceived: 12/18/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Radon 222	-67.8	pCi/L	U			D5072-92	12/18/13 18:01 / dpb
Radon 222 precision (±)	74.1	pCi/L				D5072-92	12/18/13 18:01 / dpb
Radon 222 MDC	130	pCi/L				D5072-92	12/18/13 18:01 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/23/13
Project: Not Indicated
Work Order: C13120621

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92										Batch: R181914
Sample ID: C13120621-001ADUP	3	Sample Duplicate				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		1.6	pCi/L					210	20	UR
Radon 222 precision (±)		75.1	pCi/L							
Radon 222 MDC		130	pCi/L							
- The Sample and the Duplicate are both below the MDC. The RPD is acceptable.										
Sample ID: MB-R181914	3	Method Blank				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		7	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R181914		Laboratory Control Sample				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		552	pCi/L		96	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312666
Pace Project No.: 30109791

Sample: 1312666-001 53-7 **Lab ID: 30109791001** Collected: 12/13/13 14:00 Received: 12/17/13 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.166 ± 0.380 (0.225)**	pCi/L	12/23/13 12:34	13982-63-3	
Radium-228	EPA 904.0	**0.414 ± 0.460 (0.931)**	pCi/L	01/02/14 16:27	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312666
Pace Project No.: 30109791

QC Batch: RADC/18124
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30109791001

METHOD BLANK: 671631
Matrix: Water
Associated Lab Samples: 30109791001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.536 ± 0.648 (0.960)	pCi/L	12/23/13 10:50	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312666
Pace Project No.: 30109791

QC Batch: RADC/18128
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30109791001

METHOD BLANK: 671635
Matrix: Water
Associated Lab Samples: 30109791001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.134 ± 0.301 (0.670)	pCi/L	01/02/14 13:25	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449740** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
;	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449741** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	109	85	115			
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	49	1.0	50.00	0	97.2	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.4	85	115			
Copper	0.48	0.0060	0.5000	0	96.7	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Magnesium	49	1.0	50.00	0	98.0	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Potassium	48	1.0	50.00	0	95.1	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	48	1.0	50.00	0	95.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449741** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.027	0.0010	0.02500	0	106	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.4	85	115			
Lead	0.026	0.0010	0.02500	0	105	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
enic	ND	0.0010								
ad	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.027	0.0010	0.02500	0	109	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-11064**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **11064**	RunNo: **15897**
Prep Date: **1/3/2014**	Analysis Date: **1/3/2014**	SeqNo: **458393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-11064**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **11064**	RunNo: **15897**
Prep Date: **1/3/2014**	Analysis Date: **1/3/2014**	SeqNo: **458394** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.9	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447258** 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								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.7	90	110			
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.4	90	110			
Sulfate	9.5	0.50	10.00	0	95.4	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.2	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447268** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.97	0.10	1.000	0	97.2	90	110			
Chloride	4.6	0.50	5.000	0	92.6	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.4	90	110			
Sulfate	12	0.50	12.50	0	93.9	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447280** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	97.6	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.2	90	110			
Sulfate	20	0.50	20.00	0	98.5	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/16/2013** SeqNo: **447292** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	2.400	0	98.4	90	110			
Chloride	12	0.50	12.00	0	101	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	100	90	110			
Sulfate	31	0.50	30.00	0	102	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/17/2013** SeqNo: **447304** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.94	0.10	1.000	0	93.6	90	110			
Chloride	4.6	0.50	5.000	0	92.5	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.4	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/17/2013** SeqNo: **447316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	96.9	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.3	90	110			
Sulfate	20	0.50	20.00	0	98.1	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/17/2013** SeqNo: **447327** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.95	0.10	1.000	0	95.2	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10820**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**							
Client ID: **PBW**	Batch ID: **10820**	RunNo: **15560**							
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447701**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10820**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**							
Client ID: **LCSW**	Batch ID: **10820**	RunNo: **15560**							
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447702**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.0	1.0	5.000	0	99.8	80	120			

Sample ID **LCSD-10820**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**							
Client ID: **LCSS02**	Batch ID: **10820**	RunNo: **15560**							
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447704**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.7	1.0	5.000	0	94.8	80	120	5.14	20	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10822**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447079** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10822**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447080** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	113	70	130			

Sample ID **LCSD-10822**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447081** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	108	70	130	4.52	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10796**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447133** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.2	17	123			
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	22.6	113			

Sample ID **LCS-10796**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447135** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
Aroclor 1260	3.8	1.0	5.000	0	75.7	35.7	137			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		64.4	22.6	113			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.4	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.9	70	130			

Sample ID **100ng lcs200ng aca**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	20	1.0	20.00	0	102	82.2	124			
Chlorobenzene	20	1.0	20.00	0	99.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **100ng lcs200ng aca**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	9.0		10.00		90.3	70	130			
Surr: Toluene-d8	9.4		10.00		94.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**	
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
trosodiphenylamine	ND	10								
ıphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	90		200.0		45.2	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	64		100.0		64.0	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		68.2	38.3	110			
Surr: 4-Terphenyl-d14	75		100.0		74.7	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **lcs-10800**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446855** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	89.4	48	101			
4-Chloro-3-methylphenol	190	10	200.0	0	94.8	47.9	109			
2-Chlorophenol	180	10	200.0	0	92.5	40	105			
1,4-Dichlorobenzene	96	10	100.0	0	96.4	40.8	94.3			S
2,4-Dinitrotoluene	87	10	100.0	0	86.8	28.3	131			
N-Nitrosodi-n-propylamine	100	10	100.0	0	101	46.2	119			
4-Nitrophenol	88	10	200.0	0	43.8	10.5	67.9			
Pentachlorophenol	130	20	200.0	0	65.2	22.4	81.1			
Phenol	110	10	200.0	0	54.2	21.4	72.9			
Pyrene	83	10	100.0	0	83.0	46.9	109			
1,2,4-Trichlorobenzene	93	10	100.0	0	93.3	43.1	98.4			
Surr: 2-Fluorophenol	120		200.0		59.7	22.7	98			
Surr: Phenol-d5	110		200.0		53.4	23.4	74.9			
Surr: 2,4,6-Tribromophenol	180		200.0		91.9	23.3	111			
Surr: Nitrobenzene-d5	81		100.0		81.5	36.8	111			
Surr: 2-Fluorobiphenyl	85		100.0		84.8	38.3	110			
Surr: 4-Terphenyl-d14	88		100.0		87.8	52.1	116			

Sample ID **lcsd-10800**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446856** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	90	10	100.0	0	89.9	48	101	0.558	25	
4-Chloro-3-methylphenol	180	10	200.0	0	92.1	47.9	109	2.84	32.7	
2-Chlorophenol	170	10	200.0	0	83.9	40	105	9.78	20	
1,4-Dichlorobenzene	83	10	100.0	0	82.6	40.8	94.3	15.4	20	
2,4-Dinitrotoluene	81	10	100.0	0	80.8	28.3	131	7.11	29.9	
N-Nitrosodi-n-propylamine	90	10	100.0	0	90.4	46.2	119	10.9	23.1	
4-Nitrophenol	78	10	200.0	0	39.0	10.5	67.9	11.6	40.5	
Pentachlorophenol	110	20	200.0	0	54.5	22.4	81.1	17.8	37.3	
Phenol	92	10	200.0	0	46.2	21.4	72.9	15.9	20	
Pyrene	83	10	100.0	0	83.1	46.9	109	0.193	26.5	
1,2,4-Trichlorobenzene	84	10	100.0	0	83.8	43.1	98.4	10.7	27.2	
Surr: 2-Fluorophenol	110		200.0		55.0	22.7	98	0	0	
Surr: Phenol-d5	93		200.0		46.5	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		79.0	23.3	111	0	0	
Surr: Nitrobenzene-d5	81		100.0		80.8	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	83		100.0		82.9	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID	**lcsd-10800**	SampType:	**LCSD**		TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**10800**		RunNo:	**15530**					
Prep Date:	**12/16/2013**	Analysis Date:	**12/16/2013**		SeqNo:	**446856**	Units:	**µg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		83		100.0		82.9	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10797**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447054** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	21		20.00		104	24.5	139			

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	41	2.0	80.00	0	51.6	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	44.8	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	42.0	36.6	89.6			
Acenaphthylene	46	2.5	80.20	0	57.7	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.1	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.2	0.60	4.020	0	53.7	43.9	111			
Anthracene	2.2	0.60	4.020	0	56.0	44.3	103			
Fluoranthene	4.6	0.30	8.020	0	57.5	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.7	32.6	103			
Benz(a)anthracene	0.46	0.070	0.8020	0	57.4	43	114			
Chrysene	2.2	0.20	4.020	0	54.0	40.2	100			
Benzo(b)fluoranthene	0.57	0.10	1.002	0	56.9	44.4	118			
Benzo(k)fluoranthene	0.29	0.070	0.5000	0	58.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS-10797**	SampType: **LCS**		TestCode: **EPA Method 8310: PAHs**		
Client ID: **LCSW**	Batch ID: **10797**		RunNo: **15541**		
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**		SeqNo: **447058**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.28	0.070	0.5020	0	55.8	34.5	118			
Dibenz(a,h)anthracene	0.59	0.12	1.002	0	58.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	64.4	42.4	113			
Surr: Benzo(e)pyrene	15		20.00		74.8	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10891**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449210** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10891**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449211** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	103	73.7	135			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-1**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446604**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446605**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.4	90	110			

Sample ID **mb-2**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446624**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-2**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446625**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10881**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10881**	RunNo: **15624**
Prep Date: **12/18/2013**	Analysis Date: **12/19/2013**	SeqNo: **450504** 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-10881**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10881**	RunNo: **15624**
Prep Date: **12/18/2013**	Analysis Date: **12/19/2013**	SeqNo: **450505** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312666 | RcptNo: 1

Received by/date: KS 12/16/13

Logged By: Anne Thorne 12/16/2013 9:03:00 AM Anne Thorne

Completed By: Anne Thorne 12/16/2013 Anne Thorne

Reviewed By: AT 12/16/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

AT 12/16/13

# of preserved bottles checked for pH: 8 (<2 or >12 unless noted)

Adjusted? ____

Checked by: AT 12/16/13

Special Handling (if applicable)

16. 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: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			

Chain-of-Custody Record

Client: AMEC E+I, INC

Mailing Address: 8519 Jefferson
ALBUQUERQUE, NM 87114

Phone #: 505-821-1801

email or Fax#: David.Janney@AMEC.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: Lightning Dock / Cyrq Energy

Project #: 11-517-000102

Project Manager: David Janney

Sampler: JC + ER

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.9

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. 1312666	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12-13-13	14:00	H_2O	53-7			-001																

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
12-16-13	0905			12/16/13	9:03	SEE ATTACHED ANALYTES LIST.
Date:	Time:	Relinquished by:	Received by:	Date	Time	

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

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

January 14, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal GW Quality Monitoring OrderNo.: 1312A59

Dear David Janney:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/21/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312A59**
Date Reported: **1/14/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Project: Lightning Dock Geothermal GW Quality
Lab ID: 1312A59-001 **Matrix:** AQUEOUS

Client Sample ID: LDG 45-7
Collection Date: 12/19/2013 11:00:00 AM
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 2:31:48 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Surr: Decachlorobiphenyl	93.6	17-123		%REC	1	12/30/2013 2:42:39 AM	10979
Surr: Tetrachloro-m-xylene	98.0	22.6-113		%REC	1	12/30/2013 2:42:39 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	100		µg/L	50	12/28/2013 3:37:14 AM	10981
1-Methylnaphthalene	ND	100		µg/L	50	12/28/2013 3:37:14 AM	10981
2-Methylnaphthalene	ND	100		µg/L	50	12/28/2013 3:37:14 AM	10981
Acenaphthylene	ND	120		µg/L	50	12/28/2013 3:37:14 AM	10981
Acenaphthene	ND	250		µg/L	50	12/28/2013 3:37:14 AM	10981
Fluorene	ND	40		µg/L	50	12/28/2013 3:37:14 AM	10981
Phenanthrene	ND	30		µg/L	50	12/28/2013 3:37:14 AM	10981
Anthracene	ND	30		µg/L	50	12/28/2013 3:37:14 AM	10981
Fluoranthene	ND	15		µg/L	50	12/28/2013 3:37:14 AM	10981
Pyrene	ND	15		µg/L	50	12/28/2013 3:37:14 AM	10981
Benz(a)anthracene	ND	3.5		µg/L	50	12/28/2013 3:37:14 AM	10981
Chrysene	ND	10		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(b)fluoranthene	ND	5.0		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(k)fluoranthene	ND	3.5		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(a)pyrene	ND	3.5		µg/L	50	12/28/2013 3:37:14 AM	10981
Dibenz(a,h)anthracene	ND	6.2		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(g,h,i)perylene	ND	6.2		µg/L	50	12/28/2013 3:37:14 AM	10981
Indeno(1,2,3-cd)pyrene	ND	12		µg/L	50	12/28/2013 3:37:14 AM	10981
Surr: Benzo(e)pyrene	113	24.5-139		%REC	50	12/28/2013 3:37:14 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	14	0.50	*	mg/L	5	12/24/2013 3:52:17 PM	R15742
Chloride	97	2.5		mg/L	5	12/23/2013 9:15:25 PM	R15706
Bromide	ND	0.50		mg/L	5	12/23/2013 9:15:25 PM	R15706
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/24/2013 3:52:17 PM	R15742
Sulfate	540	10	*	mg/L	20	12/23/2013 9:27:49 PM	R15706
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/23/2013 11:31:56 PM	R15706

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.21	0.020	*	mg/L	1	12/23/2013 6:00:22 PM	R15707
Barium	0.065	0.0020		mg/L	1	12/23/2013 6:00:22 PM	R15707
Boron	0.46	0.040		mg/L	1	12/23/2013 6:00:22 PM	R15707
Cadmium	ND	0.0020		mg/L	1	12/23/2013 6:00:22 PM	R15707
Calcium	23	1.0		mg/L	1	12/30/2013 12:25:16 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/23/2013 6:00:22 PM	R15707
Copper	ND	0.0060		mg/L	1	12/27/2013 2:35:33 PM	R15768
Iron	ND	0.020		mg/L	1	12/30/2013 12:25:16 PM	R15805
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:25:16 PM	R15805
Manganese	0.018	0.0020		mg/L	1	12/23/2013 6:00:22 PM	R15707
Molybdenum	0.026	0.0080		mg/L	1	12/23/2013 6:00:22 PM	R15707
Nickel	ND	0.010		mg/L	1	12/27/2013 2:35:33 PM	R15768
Potassium	30	1.0		mg/L	1	12/30/2013 12:25:16 PM	R15805
Silver	ND	0.0050		mg/L	1	12/23/2013 6:00:22 PM	R15707
Sodium	300	5.0		mg/L	5	12/30/2013 12:27:09 PM	R15805
Zinc	ND	0.010		mg/L	1	12/27/2013 2:35:33 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.012	0.0010	*	mg/L	1	1/7/2014 2:57:12 PM	R15933
Lead	ND	0.0010		mg/L	1	1/7/2014 2:57:12 PM	R15933
Selenium	0.0017	0.0010		mg/L	1	1/7/2014 2:57:12 PM	R15933
Uranium	ND	0.0010		mg/L	1	1/7/2014 6:09:59 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:11:45 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzoic acid	ND	40		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Lab ID: 1312A59-001 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Phenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Surr: 2-Fluorophenol	58.0	22.7-98		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: Phenol-d5	43.6	23.4-74.9		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: 2,4,6-Tribromophenol	86.2	23.3-111		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: Nitrobenzene-d5	83.6	36.8-111		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: 2-Fluorobiphenyl	102	38.3-110		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: 4-Terphenyl-d14	90.8	52.1-116		%REC	1	12/26/2013 10:13:19 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Toluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Naphthalene	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Acetone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774

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Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Butanone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,3-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Styrene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/29/2013 8:16:13 PM	R15774
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
Surr: Dibromofluoromethane	106	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
Surr: Toluene-d8	97.4	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	52	1.1		mg/L	1	12/24/2013	10974
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	1/8/2014	11134
SM4500-H+B: PH						Analyst: **SRM**	
pH	6.82	1.68	H	pH units	1	12/23/2013 7:06:45 PM	R15709
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	110	20		mg/L CaCO3	1	12/26/2013 1:03:39 PM	R15744
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/26/2013 1:03:39 PM	R15744
Total Alkalinity (as CaCO3)	110	20		mg/L CaCO3	1	12/26/2013 1:03:39 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1270	40.0	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 2:45:40 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Surr: Decachlorobiphenyl	74.4	17-123		%REC	1	12/30/2013 3:28:36 AM	10979
Surr: Tetrachloro-m-xylene	66.0	22.6-113		%REC	1	12/30/2013 3:28:36 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/28/2013 4:06:32 AM	10981
1-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:06:32 AM	10981
2-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:06:32 AM	10981
Acenaphthylene	ND	2.5		µg/L	1	12/28/2013 4:06:32 AM	10981
Acenaphthene	ND	5.0		µg/L	1	12/28/2013 4:06:32 AM	10981
Fluorene	ND	0.80		µg/L	1	12/28/2013 4:06:32 AM	10981
Phenanthrene	ND	0.60		µg/L	1	12/28/2013 4:06:32 AM	10981
Anthracene	ND	0.60		µg/L	1	12/28/2013 4:06:32 AM	10981
Fluoranthene	ND	0.30		µg/L	1	12/28/2013 4:06:32 AM	10981
Pyrene	ND	0.30		µg/L	1	12/28/2013 4:06:32 AM	10981
Benz(a)anthracene	ND	0.070		µg/L	1	12/28/2013 4:06:32 AM	10981
Chrysene	ND	0.20		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(a)pyrene	ND	0.070		µg/L	1	12/28/2013 4:06:32 AM	10981
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/28/2013 4:06:32 AM	10981
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/28/2013 4:06:32 AM	10981
Surr: Benzo(e)pyrene	35.0	24.5-139		%REC	1	12/28/2013 4:06:32 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	17	0.50	*	mg/L	5	12/24/2013 4:04:41 PM	R15742
Chloride	67	2.5		mg/L	5	12/23/2013 9:40:14 PM	R15706
Bromide	ND	0.50		mg/L	5	12/23/2013 9:40:14 PM	R15706
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/24/2013 4:04:41 PM	R15742
Sulfate	250	2.5		mg/L	5	12/23/2013 9:40:14 PM	R15706
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/23/2013 11:44:21 PM	R15706

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.040	0.020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Barium	0.051	0.0020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Boron	2.0	0.20		mg/L	5	12/23/2013 6:05:51 PM	R15707
Cadmium	ND	0.0020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Calcium	9.6	1.0		mg/L	1	12/30/2013 12:28:50 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/23/2013 6:03:59 PM	R15707
Copper	0.029	0.0060		mg/L	1	12/27/2013 2:39:09 PM	R15768
Iron	0.29	0.020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:28:50 PM	R15805
Manganese	0.028	0.0020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Molybdenum	0.094	0.0080		mg/L	1	12/23/2013 6:03:59 PM	R15707
Nickel	0.049	0.010		mg/L	1	12/27/2013 2:39:09 PM	R15768
Potassium	8.6	1.0		mg/L	1	12/30/2013 12:28:50 PM	R15805
Silver	ND	0.0050		mg/L	1	12/23/2013 6:03:59 PM	R15707
Sodium	260	5.0		mg/L	5	12/30/2013 12:30:46 PM	R15805
Zinc	0.027	0.010		mg/L	1	12/27/2013 2:39:09 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	3.2	0.10	*	mg/L	100	1/7/2014 6:12:38 PM	R15934
Lead	0.0011	0.0010		mg/L	1	1/7/2014 2:59:51 PM	R15933
Selenium	0.0021	0.0010		mg/L	1	1/7/2014 2:59:51 PM	R15933
Uranium	ND	0.0010		mg/L	1	1/8/2014 2:18:28 PM	R15963
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:13:33 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzoic acid	160	40		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Phenol	18	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Surr: 2-Fluorophenol	49.9	22.7-98		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: Phenol-d5	36.5	23.4-74.9		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: 2,4,6-Tribromophenol	84.2	23.3-111		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: Nitrobenzene-d5	71.8	36.8-111		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: 2-Fluorobiphenyl	84.9	38.3-110		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: 4-Terphenyl-d14	89.5	52.1-116		%REC	1	12/26/2013 10:42:21 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	4.8	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Toluene	2.0	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,4-Trimethylbenzene	1.6	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Naphthalene	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Acetone	78	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Butanone	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,3-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Styrene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	370	10		µg/L	10	12/28/2013 9:40:30 AM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Trichloroethene (TCE)	1.0	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/29/2013 8:44:38 PM	R15774
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
Surr: Dibromofluoromethane	107	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
Surr: Toluene-d8	94.1	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	2.8	1.0		mg/L	1	12/24/2013	10974
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	49	12		µg/L	5	1/8/2014	11134
SM4500-H+B: PH						Analyst: **SRM**	
pH	8.41	1.68	H	pH units	1	12/23/2013 7:11:07 PM	R15709
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	210	20		mg/L CaCO3	1	12/26/2013 1:13:27 PM	R15744
Carbonate (As CaCO3)	2.9	2.0		mg/L CaCO3	1	12/26/2013 1:13:27 PM	R15744
Total Alkalinity (as CaCO3)	210	20		mg/L CaCO3	1	12/26/2013 1:13:27 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	800	40.0	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 2:59:43 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Surr: Decachlorobiphenyl	85.6	17-123		%REC	1	12/30/2013 4:14:27 AM	10979
Surr: Tetrachloro-m-xylene	80.4	22.6-113		%REC	1	12/30/2013 4:14:27 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/28/2013 4:35:51 AM	10981
1-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:35:51 AM	10981
2-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:35:51 AM	10981
Acenaphthylene	ND	2.5		µg/L	1	12/28/2013 4:35:51 AM	10981
Acenaphthene	ND	5.0		µg/L	1	12/28/2013 4:35:51 AM	10981
Fluorene	ND	0.80		µg/L	1	12/28/2013 4:35:51 AM	10981
Phenanthrene	ND	0.60		µg/L	1	12/28/2013 4:35:51 AM	10981
Anthracene	ND	0.60		µg/L	1	12/28/2013 4:35:51 AM	10981
Fluoranthene	ND	0.30		µg/L	1	12/28/2013 4:35:51 AM	10981
Pyrene	ND	0.30		µg/L	1	12/28/2013 4:35:51 AM	10981
Benz(a)anthracene	ND	0.070		µg/L	1	12/28/2013 4:35:51 AM	10981
Chrysene	ND	0.20		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(a)pyrene	ND	0.070		µg/L	1	12/28/2013 4:35:51 AM	10981
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/28/2013 4:35:51 AM	10981
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/28/2013 4:35:51 AM	10981
Surr: Benzo(e)pyrene	61.9	24.5-139		%REC	1	12/28/2013 4:35:51 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	3.9	0.50		mg/L	5	12/24/2013 4:17:06 PM	R15742
Chloride	170	10		mg/L	20	12/23/2013 10:17:29 PM	R15706
Bromide	0.80	0.50		mg/L	5	12/23/2013 10:05:04 PM	R15706
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/24/2013 4:17:06 PM	R15742
Sulfate	700	10	*	mg/L	20	12/23/2013 10:17:29 PM	R15706
Nitrate+Nitrite as N	2.9	1.0		mg/L	5	12/23/2013 11:56:46 PM	R15706

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Qualifiers:

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- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- P Sample pH greater than 2 for VOA and TOC only.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.069	0.020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Barium	0.099	0.0020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Boron	0.52	0.040		mg/L	1	12/23/2013 6:07:31 PM	R15707
Cadmium	ND	0.0020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Calcium	58	1.0		mg/L	1	12/30/2013 12:32:28 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/23/2013 6:07:31 PM	R15707
Copper	ND	0.0060		mg/L	1	12/27/2013 2:42:47 PM	R15768
Iron	0.033	0.020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:32:28 PM	R15805
Manganese	0.019	0.0020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Molybdenum	0.055	0.0080		mg/L	1	12/23/2013 6:07:31 PM	R15707
Nickel	ND	0.010		mg/L	1	12/27/2013 2:42:47 PM	R15768
Potassium	31	1.0		mg/L	1	12/30/2013 12:32:28 PM	R15805
Silver	ND	0.0050		mg/L	1	12/23/2013 6:07:31 PM	R15707
Sodium	420	5.0		mg/L	5	12/30/2013 12:34:24 PM	R15805
Zinc	ND	0.010		mg/L	1	12/27/2013 2:42:47 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.013	0.0010	*	mg/L	1	1/7/2014 3:02:31 PM	R15933
Lead	ND	0.0010		mg/L	1	1/7/2014 3:02:31 PM	R15933
Selenium	0.010	0.0010		mg/L	1	1/7/2014 3:02:31 PM	R15933
Uranium	0.0013	0.0010		mg/L	1	1/7/2014 6:15:17 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:15:19 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzoic acid	ND	40		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980

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

Qualifiers:

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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Phenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Surr: 2-Fluorophenol	57.1	22.7-98		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: Phenol-d5	46.8	23.4-74.9		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: 2,4,6-Tribromophenol	89.0	23.3-111		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: Nitrobenzene-d5	75.2	36.8-111		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: 2-Fluorobiphenyl	83.1	38.3-110		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: 4-Terphenyl-d14	80.8	52.1-116		%REC	1	12/26/2013 11:11:00 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Toluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Ethylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,4-Trimethylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,3,5-Trimethylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Naphthalene	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
1-Methylnaphthalene	ND	40		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Methylnaphthalene	ND	40		µg/L	10	12/28/2013 11:33:52 AM	R15774
Acetone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Bromobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Bromodichloromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Bromomethane	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Butanone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Carbon disulfide	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Carbon Tetrachloride	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chloroethane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chloroform	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chloromethane	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Chlorotoluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
4-Chlorotoluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
cis-1,2-DCE	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
cis-1,3-Dichloropropene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
Dibromochloromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Dibromomethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,3-Dichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,4-Dichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Dichlorodifluoromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1-Dichloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1-Dichloroethene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dichloropropane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,3-Dichloropropane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
2,2-Dichloropropane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1-Dichloropropene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Hexachlorobutadiene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Hexanone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Isopropylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
4-Isopropyltoluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
4-Methyl-2-pentanone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Methylene Chloride	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
n-Butylbenzene	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
n-Propylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
sec-Butylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Styrene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
tert-Butylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
trans-1,2-DCE	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
trans-1,3-Dichloropropene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,3-Trichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,4-Trichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,1-Trichloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,2-Trichloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Trichloroethene (TCE)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Trichlorofluoromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,3-Trichloropropane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
Vinyl chloride	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Xylenes, Total	ND	15		µg/L	10	12/28/2013 11:33:52 AM	R15774
Surr: 1,2-Dichloroethane-d4	99.8	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
Surr: 4-Bromofluorobenzene	110	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
Surr: Dibromofluoromethane	107	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
Surr: Toluene-d8	94.1	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	1.4	1.1		mg/L	1	12/24/2013	10974
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	6.7	2.5		µg/L	1	1/8/2014	11134
SM4500-H+B: PH						Analyst: **SRM**	
pH	8.59	1.68	*H	pH units	1	12/23/2013 7:15:09 PM	R15709
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	100	20		mg/L CaCO3	1	12/26/2013 1:26:03 PM	R15744
Carbonate (As CaCO3)	9.9	2.0		mg/L CaCO3	1	12/26/2013 1:26:03 PM	R15744
Total Alkalinity (as CaCO3)	110	20		mg/L CaCO3	1	12/26/2013 1:26:03 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1480	200	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal GW Quality
Collection Date:
Lab ID: 1312A59-004
Matrix: TRIP BLANK
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 3:13:39 PM	10989
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Toluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Naphthalene	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Acetone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromoform	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Butanone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal GW Quality
Collection Date:
Lab ID: 1312A59-004
Matrix: TRIP BLANK
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Styrene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/28/2013 12:02:19 PM	R15774
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774
Surr: Dibromofluoromethane	109	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774
Surr: Toluene-d8	93.3	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 131224034
Project Name: 1312A59

Analytical Results Report

Sample Number 131224034-001 **Sampling Date** 12/19/2013 **Date/Time Received** 12/24/2013 12:26 PM
Client Sample ID 1312A59-001M / LDG 45-7 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number 131224034-002 **Sampling Date** 12/19/2013 **Date/Time Received** 12/24/2013 12:26 PM
Client Sample ID 1312A59-001O / LDG 45-7 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	ND	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Sample Number 131224034-003 **Sampling Date** 12/20/2013 **Date/Time Received** 12/24/2013 12:26 PM
Client Sample ID 1312A59-002M / LDG 63-7 **Sampling Time** 1:00 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number 131224034-004 **Sampling Date** 12/20/2013 **Date/Time Received** 12/24/2013 12:26 PM
Client Sample ID 1312A59-002O / LDG 63-7 **Sampling Time** 1:00 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	0.0808	mg/L	0.01	1/7/2014	CRW	SM4500PF	

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131224034
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312A59
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131224034-005	**Sampling Date**	12/20/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-003M / IW-1	**Sampling Time**	5:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number	131224034-006	**Sampling Date**	12/20/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-003O / IW-1	**Sampling Time**	5:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	1.92	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120851-001
Client Sample ID: 1312A59-001K LDG 45-7

Revised Date: 01/14/14
Report Date: 01/09/14
Collection Date: 12/19/13 11:00
DateReceived: 12/24/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.9	mg/L		0.1		E200.7	12/30/13 13:50 / eli-b
Rubidium	0.25	mg/L		0.01		E200.8	01/09/14 11:42 / eli-b
Ruthenium	ND	mg/L		0.01		E200.8	01/09/14 11:42 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	01/09/14 11:42 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	2560	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 precision (±)	138	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 MDC	184	pCi/L				D5072-92	12/26/13 13:29 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120851-002
Client Sample ID: 1312A59-002K LDG 63-7

Revised Date: 01/14/14
Report Date: 01/09/14
Collection Date: 12/20/13 13:00
DateReceived: 12/24/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.6	mg/L		0.1		E200.7	12/30/13 14:01 / eli-b
Rubidium	0.07	mg/L		0.01		E200.8	01/09/14 11:46 / eli-b
Ruthenium	ND	mg/L		0.01		E200.8	01/09/14 11:46 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	01/09/14 11:46 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	78.6	pCi/L	U			D5072-92	12/26/13 13:29 / dpb
Radon 222 precision (±)	87.6	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 MDC	150	pCi/L				D5072-92	12/26/13 13:29 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120851-003
Client Sample ID: 1312A59-003K IW-1

Revised Date: 01/14/14
Report Date: 01/09/14
Collection Date: 12/20/13 17:00
DateReceived: 12/24/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.6	mg/L		0.1		E200.7	12/30/13 14:05 / eli-b
Rubidium	0.21	mg/L		0.01		E200.8	01/09/14 11:50 / eli-b
Ruthenium	ND	mg/L		0.01		E200.8	01/09/14 11:50 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	01/09/14 11:50 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	1090	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 precision (±)	98.3	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 MDC	145	pCi/L				D5072-92	12/26/13 13:29 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/14/14
Report Date: 01/09/14
Work Order: C13120851

Client: Hall Environmental
Project: Not Indicated

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92									Batch: R182062	
Sample ID: C13120851-003BDUP	3	Sample Duplicate				Run: PACKARD 3100TR_131226A			12/26/13 13:29	
Radon 222		982	pCi/L					10	20	
Radon 222 precision (±)		97.0	pCi/L							
Radon 222 MDC		145	pCi/L							
Sample ID: MB-R182062	3	Method Blank				Run: PACKARD 3100TR_131226A			12/26/13 13:29	
Radon 222		9	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R182062		Laboratory Control Sample				Run: PACKARD 3100TR_131226A			12/26/13 13:29	
Radon 222		2210	pCi/L		97	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/14/14
Report Date: 01/09/14
Work Order: C13120851

Client: Hall Environmental
Project: Not Indicated

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: SUB-B217135	
Sample ID: ICV		Continuing Calibration Verification Standard							12/30/13 10:48	
Lithium		1.20	mg/L	0.10	96	95	105			
Method: E200.7									Batch: B_R217135	
Sample ID: MB-6500DIS131230A		Method Blank				Run: SUB-B217135			12/30/13 11:11	
Lithium		ND	mg/L	0.0003						
Sample ID: LFB-6500DIS131230A		Laboratory Fortified Blank				Run: SUB-B217135			12/30/13 11:15	
Lithium		1.02	mg/L	0.10	102	85	115			
Sample ID: B13121948-001AMS2		Sample Matrix Spike				Run: SUB-B217135			12/30/13 13:35	
Lithium		6.00	mg/L	0.10	101	70	130			
Sample ID: B13121948-001AMSD2		Sample Matrix Spike Duplicate				Run: SUB-B217135			12/30/13 13:38	
Lithium		6.30	mg/L	0.10	107	70	130	4.8	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/14/14

Client: Hall Environmental

Report Date: 01/09/14

Project: Not Indicated

Work Order: C13120851

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B217575	
Sample ID: QCS-	3	Initial Calibration Verification Standard							01/09/14 09:38	
Rubidium		0.0527	mg/L	0.010	105	90	110			
Ruthenium		0.0520	mg/L	0.010	104	90	110			
Tungsten		0.0526	mg/L	0.10	105	90	110			
Method: E200.8									Batch: B_R217575	
Sample ID: LFB	3	Laboratory Fortified Blank				Run: SUB-B217575			01/09/14 09:54	
Rubidium		0.0492	mg/L	0.010	98	85	115			
Ruthenium		0.0530	mg/L	0.010	106	85	115			
Tungsten		0.0508	mg/L	0.10	102	85	115			
Sample ID: LRB	3	Method Blank				Run: SUB-B217575			01/09/14 10:22	
Rubidium		ND	mg/L	0.001						
Ruthenium		ND	mg/L	0.001						
Tungsten		ND	mg/L	0.001						
Sample ID: B13121948-001AMS	2	Sample Matrix Spike				Run: SUB-B217575			01/09/14 11:54	
Ruthenium		0.0536	mg/L	0.010	107	70	130			
Tungsten		0.141	mg/L	0.10	137	70	130			S
Sample ID: B13121948-001AMSD	2	Sample Matrix Spike Duplicate				Run: SUB-B217575			01/09/14 11:58	
Ruthenium		0.0534	mg/L	0.010	107	70	130	0.3	20	
Tungsten		0.138	mg/L	0.10	131	70	130	2.1	20	S

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

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ANALYTICAL RESULTS

Project: 1312A59
Pace Project No.: 30110362

Sample: 1312A59-001 LDG 45-7 **Lab ID: 30110362001** Collected: 12/19/13 11:00 Received: 12/24/13 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**6.49 ± 1.35 (0.367)**	pCi/L	01/08/14 11:27	13982-63-3	
Radium-228	EPA 904.0	**0.522 ± 0.331 (0.614)**	pCi/L	01/09/14 13:06	15262-20-1	

Sample: 1312A59-002 LDG 63-7 **Lab ID: 30110362002** Collected: 12/20/13 13:00 Received: 12/24/13 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.220 ± 0.306 (0.775)**	pCi/L	01/08/14 11:29	13982-63-3	
Radium-228	EPA 904.0	**0.0100 ± 0.365 (0.847)**	pCi/L	01/09/14 13:29	15262-20-1	

Sample: 1312A59-003 IW-1 **Lab ID: 30110362003** Collected: 12/20/13 17:00 Received: 12/24/13 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**1.04 ± 0.535 (0.561)**	pCi/L	01/08/14 11:27	13982-63-3	
Radium-228	EPA 904.0	**0.462 ± 0.343 (0.666)**	pCi/L	01/09/14 13:29	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1312A59
Pace Project No.: 30110362

QC Batch: RADC/18195 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30110362001, 30110362002, 30110362003

METHOD BLANK: 674584 Matrix: Water
Associated Lab Samples: 30110362001, 30110362002, 30110362003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.102 ± 0.246 (0.614)	pCi/L	01/08/14 10:30	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1312A59
Pace Project No.: 30110362

QC Batch: RADC/18198 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30110362001, 30110362002, 30110362003

METHOD BLANK: 674587 Matrix: Water
Associated Lab Samples: 30110362001, 30110362002, 30110362003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.211 ± 0.277 (0.591)	pCi/L	01/09/14 13:04	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453037** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	107	85	115			
ium	0.49	0.0020	0.5000	0	97.1	85	115			
.on	0.50	0.040	0.5000	0	99.2	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.3	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.4	85	115			
Silver	0.099	0.0050	0.1000	0	98.7	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.51	0.0060	0.5000	0	102	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.50	0.010	0.5000	0	99.4	85	115			
Zinc	0.52	0.010	0.5000	0	103	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456073** 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**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456074** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	85	115			
Iron	0.54	0.020	0.5000	0	107	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **1312A59-003JMS** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **IW-1** Batch ID: **R15933** RunNo: **15933**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459412** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.036	0.0010	0.02500	0.01338	90.2	70	130			
Lead	0.029	0.0010	0.02500	.00007590	116	70	130			
Selenium	0.031	0.0010	0.02500	0.01024	84.0	70	130			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R15933** RunNo: **15933**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459413** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.027	0.0010	0.02500	0	106	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R15933** RunNo: **15933**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459414** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
enic	0.023	0.0010	0.02500	0	93.7	85	115			
enium	0.023	0.0010	0.02500	0	92.5	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R15933** RunNo: **15933**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **1312A59-003JMS** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **IW-1** Batch ID: **R15934** RunNo: **15934**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.034	0.0010	0.02500	0.001347	129	70	130			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R15934** RunNo: **15934**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459484** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.027	0.0010	0.02500	0	109	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID	**MB-11092**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**11092**	RunNo:	**15947**					
Prep Date:	**1/6/2014**	Analysis Date:	**1/7/2014**	SeqNo:	**459682**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-11092**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**11092**	RunNo:	**15947**					
Prep Date:	**1/6/2014**	Analysis Date:	**1/7/2014**	SeqNo:	**459683**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452922** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	103	90	110			
Bromide	12	0.10	12.00	0	102	90	110			
Sulfate	31	0.50	30.00	0	105	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	107	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452933** 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	93.3	90	110			
Bromide	4.9	0.10	5.000	0	97.4	90	110			
Sulfate	12	0.50	12.50	0	94.3	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.7	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.8	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Sulfate	9.7	0.50	10.00	0	97.2	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.7	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452945** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452945** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	96.9	90	110			
Bromide	7.9	0.10	8.000	0	99.0	90	110			
Sulfate	20	0.50	20.00	0	98.8	90	110			
Nitrate+Nitrite as N	8.1	0.20	8.000	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452957** 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	93.6	90	110			
Bromide	4.9	0.10	5.000	0	97.4	90	110			
Sulfate	12	0.50	12.50	0	95.4	90	110			
Nitrate+Nitrite as N	4.9	0.20	5.000	0	97.5	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
ient ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
rep Date:	Analysis Date: **12/23/2013**	SeqNo: **452969** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.6	0.50	8.000	0	95.2	90	110			
Bromide	7.8	0.10	8.000	0	97.1	90	110			
Sulfate	19	0.50	20.00	0	97.3	90	110			
Nitrate+Nitrite as N	7.9	0.20	8.000	0	99.0	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **452981** 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	93.6	90	110			
Bromide	4.9	0.10	5.000	0	97.4	90	110			
Sulfate	12	0.50	12.50	0	95.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.9	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **452993** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **452993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.7	0.50	8.000	0	96.3	90	110			
Bromide	7.8	0.10	8.000	0	97.9	90	110			
Sulfate	20	0.50	20.00	0	97.6	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	99.9	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453005** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.4	90	110			
Bromide	4.8	0.10	5.000	0	96.5	90	110			
Sulfate	12	0.50	12.50	0	94.8	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.0	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.0	90	110			
Bromide	2.5	0.10	2.500	0	99.0	90	110			
Sulfate	9.7	0.50	10.00	0	97.0	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	98.9	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453017** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**							
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453017**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	97.3	90	110			
Bromide	8.0	0.10	8.000	0	99.4	90	110			
Sulfate	20	0.50	20.00	0	98.6	90	110			
Nitrate+Nitrite as N	8.1	0.20	8.000	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**							
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453027**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.0	90	110			
Bromide	4.9	0.10	5.000	0	98.4	90	110			
Sulfate	12	0.50	12.50	0	96.3	90	110			
Nitrate+Nitrite as N	4.9	0.20	5.000	0	98.2	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
ient ID: **PBW**	Batch ID: **R15742**	RunNo: **15742**							
rep Date:	Analysis Date: **12/24/2013**	SeqNo: **454474**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID **LCS-b**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R15742**	RunNo: **15742**							
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454478**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	95.0	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**							
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454484**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.7	0.10	1.600	0	108	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454496** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	109	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.7	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454508** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.8	0.10	1.600	0	109	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.9	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454513** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	107	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10974**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10974**	RunNo: **15713**
Prep Date: **12/24/2013**	Analysis Date: **12/24/2013**	SeqNo: **453480** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10974**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10974**	RunNo: **15713**
Prep Date: **12/24/2013**	Analysis Date: **12/24/2013**	SeqNo: **453481** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	92.4	80	120			

Sample ID **LCSD-10974**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10974**	RunNo: **15713**
Prep Date: **12/24/2013**	Analysis Date: **12/24/2013**	SeqNo: **453482** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.7	1.0	5.000	0	94.8	80	120	2.56	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID	**MB-10989**	SampType:	**MBLK**		TestCode:	**EPA Method 8011/504.1: EDB**				
Client ID:	**PBW**	Batch ID:	**10989**		RunNo:	**15731**				
Prep Date:	**12/26/2013**	Analysis Date:	**12/26/2013**		SeqNo:	**454148**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	**LCS-10989**	SampType:	**LCS**		TestCode:	**EPA Method 8011/504.1: EDB**				
Client ID:	**LCSW**	Batch ID:	**10989**		RunNo:	**15731**				
Prep Date:	**12/26/2013**	Analysis Date:	**12/26/2013**		SeqNo:	**454165**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10979** SampType: **MBLK** TestCode: **EPA Method 8082: PCB's**

Client ID: **PBW** Batch ID: **10979** RunNo: **15776**

Prep Date: **12/24/2013** Analysis Date: **12/29/2013** SeqNo: **455290** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		82.4	17	123			
Surr: Tetrachloro-m-xylene	2.0		2.500		81.6	22.6	113			

Sample ID **1312A59-003CMS** SampType: **MS** TestCode: **EPA Method 8082: PCB's**

Client ID: **IW-1** Batch ID: **10979** RunNo: **15776**

Prep Date: **12/24/2013** Analysis Date: **12/30/2013** SeqNo: **456259** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	55.4	70	130			S
clor 1260	3.3	1.0	5.000	0	65.9	61.1	129			
Surr: Decachlorobiphenyl	1.9		2.500		74.4	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.6	22.6	113			

Sample ID **1312A59-003CMSD** SampType: **MSD** TestCode: **EPA Method 8082: PCB's**

Client ID: **IW-1** Batch ID: **10979** RunNo: **15776**

Prep Date: **12/24/2013** Analysis Date: **12/30/2013** SeqNo: **456260** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.0	1.0	5.000	0	59.9	70	130	7.70	20	S
Aroclor 1260	3.6	1.0	5.000	0	71.1	61.1	129	7.53	12.9	
Surr: Decachlorobiphenyl	2.0		2.500		80.8	17	123	0	0	
Surr: Tetrachloro-m-xylene	1.8		2.500		70.4	22.6	113	0	0	

Sample ID **LCS-10979** SampType: **LCS** TestCode: **EPA Method 8082: PCB's**

Client ID: **LCSW** Batch ID: **10979** RunNo: **15776**

Prep Date: **12/24/2013** Analysis Date: **12/31/2013** SeqNo: **456267** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
Aroclor 1260	3.7	1.0	5.000	0	74.1	35.7	137			
Surr: Decachlorobiphenyl	2.8		2.500		113	17	123			
Surr: Tetrachloro-m-xylene	2.9		2.500		116	22.6	113			S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
ɜ-1,3-Dichloropropene	ND	1.0								
_,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	99.3	82.2	124			
Chlorobenzene	19	1.0	20.00	0	94.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	116	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	91.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
opropyltoluene	ND	1.0								
Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455220** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	95.1	82.2	124			
Chlorobenzene	19	1.0	20.00	0	93.5	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	93.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
omophenyl phenyl ether	ND	10								
tyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		55.1	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	23.3	111			
Surr: Nitrobenzene-d5	69		100.0		68.8	36.8	111			
Surr: 2-Fluorobiphenyl	71		100.0		70.6	38.3	110			
Surr: 4-Terphenyl-d14	77		100.0		77.5	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **lcs-10980** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **10980** RunNo: **15747**

Prep Date: **12/24/2013** Analysis Date: **12/26/2013** SeqNo: **454621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	65.8	48	101			
4-Chloro-3-methylphenol	130	10	200.0	0	66.5	47.9	109			
2-Chlorophenol	120	10	200.0	0	59.5	40	105			
1,4-Dichlorobenzene	57	10	100.0	0	57.2	40.8	94.3			
2,4-Dinitrotoluene	64	10	100.0	0	64.1	28.3	131			
N-Nitrosodi-n-propylamine	66	10	100.0	0	65.6	46.2	119			
4-Nitrophenol	44	10	200.0	0	21.9	10.5	67.9			
Pentachlorophenol	53	20	200.0	0	26.7	22.4	81.1			
Phenol	73	10	200.0	0	36.7	21.4	72.9			
Pyrene	61	10	100.0	0	60.9	46.9	109			
1,2,4-Trichlorobenzene	55	10	100.0	0	54.6	43.1	98.4			
Surr: 2-Fluorophenol	94		200.0		47.1	22.7	98			
Surr: Phenol-d5	72		200.0		36.0	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	60		100.0		59.7	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		67.9	38.3	110			
ırr: 4-Terphenyl-d14	72		100.0		71.6	52.1	116			

Sample ID **lcsd-10980** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **10980** RunNo: **15747**

Prep Date: **12/24/2013** Analysis Date: **12/26/2013** SeqNo: **454622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	48	101	13.8	25	
4-Chloro-3-methylphenol	150	10	200.0	0	74.3	47.9	109	11.1	32.7	
2-Chlorophenol	120	10	200.0	0	62.4	40	105	4.89	20	
1,4-Dichlorobenzene	60	10	100.0	0	60.1	40.8	94.3	4.94	20	
2,4-Dinitrotoluene	68	10	100.0	0	68.5	28.3	131	6.64	29.9	
N-Nitrosodi-n-propylamine	69	10	100.0	0	69.0	46.2	119	5.17	23.1	
4-Nitrophenol	48	10	200.0	0	24.0	10.5	67.9	8.93	40.5	
Pentachlorophenol	70	20	200.0	0	35.0	22.4	81.1	27.2	37.3	
Phenol	77	10	200.0	0	38.4	21.4	72.9	4.45	20	
Pyrene	74	10	100.0	0	73.8	46.9	109	19.2	26.5	
1,2,4-Trichlorobenzene	59	10	100.0	0	59.4	43.1	98.4	8.32	27.2	
Surr: 2-Fluorophenol	92		200.0		45.9	22.7	98	0	0	
Surr: Phenol-d5	74		200.0		36.8	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		70.5	23.3	111	0	0	
Surr: Nitrobenzene-d5	63		100.0		62.9	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	73		100.0		72.6	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID	**lcsd-10980**	SampType:	**LCSD**		TestCode:	**EPA Method 8270C: Semivolatiles**				
Client ID:	**LCSS02**	Batch ID:	**10980**		RunNo:	**15747**				
Prep Date:	**12/24/2013**	Analysis Date:	**12/26/2013**		SeqNo:	**454622**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	81		100.0		80.5	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10981**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
zo(g,h,i)perylene	ND	0.12								
ıeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	22		20.00		108	24.5	139			

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	0	53.2	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	45.1	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	41.9	36.6	89.6			
Acenaphthylene	47	2.5	80.20	0	58.3	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.6	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.4	0.60	4.020	0	60.4	43.9	111			
Anthracene	2.3	0.60	4.020	0	57.2	44.3	103			
Fluoranthene	4.5	0.30	8.020	0	56.2	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.2	32.6	103			
Benz(a)anthracene	0.47	0.070	0.8020	0	58.6	43	114			
Chrysene	2.2	0.20	4.020	0	55.2	40.2	100			
Benzo(b)fluoranthene	0.59	0.10	1.002	0	58.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.30	0.070	0.5020	0	59.8	34.5	118			
Dibenz(a,h)anthracene	0.60	0.12	1.002	0	59.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	42.4	113			
Surr: Benzo(e)pyrene	16		20.00		77.8	24.5	139			

Sample ID **1312A59-003DMS**	SampType: **MS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **IW-1**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/28/2013**	SeqNo: **455279** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	25	2.0	80.00	0	30.8	70	130			S
1-Methylnaphthalene	22	2.0	80.20	0	26.9	70	130			S
2-Methylnaphthalene	21	2.0	80.00	0	25.9	70	130			S
Acenaphthylene	26	2.5	80.20	0	32.3	70	130			S
Acenaphthene	23	5.0	80.00	0	28.2	70	130			S
Fluorene	2.3	0.80	8.020	0	28.9	70	130			S
Phenanthrene	1.3	0.60	4.020	0	32.1	70	130			S
Anthracene	1.2	0.60	4.020	0	30.8	70	130			S
Fluoranthene	2.6	0.30	8.020	0	31.9	70	130			S
Pyrene	2.5	0.30	8.020	0	31.4	70	130			S
Benz(a)anthracene	0.25	0.070	0.8020	0	31.2	70	130			S
Chrysene	1.2	0.20	4.020	0	28.9	70	130			S
Benzo(b)fluoranthene	0.30	0.10	1.002	0	29.9	70	130			S
Benzo(k)fluoranthene	0.16	0.070	0.5000	0	32.0	70	130			S
Benzo(a)pyrene	0.16	0.070	0.5020	0	31.9	70	130			S
Dibenz(a,h)anthracene	0.31	0.12	1.002	0	30.9	70	130			S
Benzo(g,h,i)perylene	0.30	0.12	1.000	0.04000	26.0	70	130			S
Indeno(1,2,3-cd)pyrene	0.67	0.25	2.004	0	33.4	70	130			S
Surr: Benzo(e)pyrene	8.1		20.00		40.7	24.5	139			

Sample ID **1312A59-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **IW-1**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/28/2013**	SeqNo: **455280** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	28	2.0	80.00	0	35.2	70	130	13.2	20	S
1-Methylnaphthalene	23	2.0	80.20	0	28.4	70	130	5.46	20	S
2-Methylnaphthalene	21	2.0	80.00	0	26.1	70	130	0.865	20	S
Acenaphthylene	30	2.5	80.20	0	37.9	70	130	15.9	20	S

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **1312A59-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **IW-1**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/28/2013**	SeqNo: **455280** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	24	5.0	80.00	0	29.8	70	130	5.52	20	S
Fluorene	2.5	0.80	8.020	0	30.5	70	130	5.45	20	S
Phenanthrene	1.5	0.60	4.020	0	37.3	70	130	15.1	20	S
Anthracene	1.4	0.60	4.020	0	35.3	70	130	13.5	20	S
Fluoranthene	2.9	0.30	8.020	0	36.0	70	130	12.1	20	S
Pyrene	2.9	0.30	8.020	0	35.7	70	130	12.6	20	S
Benz(a)anthracene	0.29	0.070	0.8020	0	36.2	70	130	14.8	20	S
Chrysene	1.4	0.20	4.020	0	33.8	70	130	15.9	20	S
Benzo(b)fluoranthene	0.37	0.10	1.002	0	36.9	70	130	20.9	20	RS
Benzo(k)fluoranthene	0.21	0.070	0.5000	0	42.0	70	130	27.0	20	RS
Benzo(a)pyrene	0.17	0.070	0.5020	0	33.9	70	130	6.06	20	S
Dibenz(a,h)anthracene	0.36	0.12	1.002	0	35.9	70	130	14.9	20	S
Benzo(g,h,i)perylene	0.34	0.12	1.000	0.04000	30.0	70	130	12.5	20	S
Indeno(1,2,3-cd)pyrene	0.77	0.25	2.004	0	38.4	70	130	13.9	20	S
Surr: Benzo(e)pyrene	9.6		20.00		47.8	24.5	139	0		

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-11134**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459499** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-11134**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	110	73.7	135			

Sample ID **LCSD-11134**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSS02**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	73.7	135	17.9	21.4	

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312A59**

all Environmental Analysis Laboratory, Inc.

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **mb-1**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454539** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454540** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10984**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454897** 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-10984**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454898** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312A59 | RcptNo: 1

Received by/date: 12/20/13
Logged By: Lindsay Mangin 12/21/2013 10:00:00 AM
Completed By: Lindsay Mangin 12/23/2013 9:53:25 AM
Reviewed By: 12/23/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 2 (<2 or >12 unless noted)
Adjusted? No
Checked by: MJ

Special Handling (if applicable)

16. 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:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Not Present			

Chain-of-Custody Record

Client: AMEC

Mailing Address: 8519 Jefferson STNE
Albuquerque, NM ~~87109~~ 87113

Phone #: (505) 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Lighting Dock Geothermal GW Quality Monitoring

Project #: 11-517-00102.06

Project Manager: David Janney

Sampler: Eric Koenig

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6

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. 1312459	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12/19/13	11:00	water	LDG 45-7	2	see	-001		SEE					REMARKS									
12/20/13	13:00	↓	LDG 63-7	2	attached	-002																
12/20/13	7:00	↓	IW-1*	~~3~~ 22	list	-003																
			Trip Blank			-004																

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/21/13	10:06	Eric D. Koenig		12/21/13	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: See attached analyte List: All dissolved metals Field filtered
*QC Sample

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

January 16, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal Water Quality Monitoring OrderNo.: 1312B40

Dear David Janney:

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/24/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312B40**
Date Reported: **1/16/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 3:41:42 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Surr: Decachlorobiphenyl	80.8	17-123		%REC	1	12/30/2013 6:32:14 AM	10979
Surr: Tetrachloro-m-xylene	72.8	22.6-113		%REC	1	12/30/2013 6:32:14 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	2.2	2.0		µg/L	1	12/28/2013 6:03:46 AM	10981
1-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 6:03:46 AM	10981
2-Methylnaphthalene	3.1	2.0		µg/L	1	12/28/2013 6:03:46 AM	10981
Acenaphthylene	ND	2.5		µg/L	1	12/28/2013 6:03:46 AM	10981
Acenaphthene	ND	5.0		µg/L	1	12/28/2013 6:03:46 AM	10981
Fluorene	ND	0.80		µg/L	1	12/28/2013 6:03:46 AM	10981
Phenanthrene	0.71	0.60		µg/L	1	12/28/2013 6:03:46 AM	10981
Anthracene	ND	0.60		µg/L	1	12/28/2013 6:03:46 AM	10981
Fluoranthene	ND	0.30		µg/L	1	12/28/2013 6:03:46 AM	10981
Pyrene	ND	0.30		µg/L	1	12/28/2013 6:03:46 AM	10981
Benz(a)anthracene	ND	0.070		µg/L	1	12/28/2013 6:03:46 AM	10981
Chrysene	ND	0.20		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(a)pyrene	ND	0.070		µg/L	1	12/28/2013 6:03:46 AM	10981
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/28/2013 6:03:46 AM	10981
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/28/2013 6:03:46 AM	10981
Surr: Benzo(e)pyrene	57.0	24.5-139		%REC	1	12/28/2013 6:03:46 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	12	2.0	*	mg/L	20	12/24/2013 3:02:38 PM	R15742
Chloride	130	10		mg/L	20	12/24/2013 3:02:38 PM	R15742
Bromide	0.32	0.10		mg/L	1	12/24/2013 2:25:24 PM	R15742
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/24/2013 2:25:24 PM	R15742
Sulfate	250	10		mg/L	20	12/24/2013 3:02:38 PM	R15742
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/28/2013 2:49:13 AM	R15794

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.050	0.020		mg/L	1	1/7/2014 11:54:32 AM	R15921
Barium	0.13	0.0020		mg/L	1	12/27/2013 2:46:38 PM	R15768
Boron	2.6	0.20		mg/L	5	12/27/2013 2:48:35 PM	R15768
Cadmium	ND	0.0020		mg/L	1	12/27/2013 2:46:38 PM	R15768
Calcium	12	1.0		mg/L	1	12/30/2013 12:41:37 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/27/2013 2:46:38 PM	R15768
Copper	ND	0.0060		mg/L	1	12/27/2013 2:46:38 PM	R15768
Iron	0.32	0.020	*	mg/L	1	12/30/2013 12:41:37 PM	R15805
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:41:37 PM	R15805
Manganese	0.14	0.0020	*	mg/L	1	12/27/2013 2:46:38 PM	R15768
Molybdenum	0.038	0.0080		mg/L	1	12/27/2013 2:46:38 PM	R15768
Nickel	0.081	0.010		mg/L	1	12/27/2013 2:46:38 PM	R15768
Potassium	22	1.0		mg/L	1	12/30/2013 12:41:37 PM	R15805
Silver	ND	0.0050		mg/L	1	12/27/2013 2:46:38 PM	R15768
Sodium	390	5.0		mg/L	5	12/30/2013 12:47:00 PM	R15805
Zinc	0.022	0.010		mg/L	1	12/27/2013 2:46:38 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.42	0.020	*	mg/L	20	1/8/2014 2:52:32 PM	R15963
Lead	ND	0.0010		mg/L	1	1/8/2014 2:36:36 PM	R15963
Selenium	ND	0.0010		mg/L	1	1/8/2014 2:36:36 PM	R15963
Uranium	ND	0.0010		mg/L	1	1/8/2014 2:36:36 PM	R15963
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:17:05 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzoic acid	ND	40		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroiscpropyl)ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001 **Matrix:** AQUEOUS **Received Date:** 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Phenol	14	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Surr: 2-Fluorophenol	60.0	22.7-98		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: Phenol-d5	42.5	23.4-74.9		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: 2,4,6-Tribromophenol	86.1	23.3-111		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: Nitrobenzene-d5	81.0	36.8-111		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: 2-Fluorobiphenyl	82.0	38.3-110		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: 4-Terphenyl-d14	86.7	52.1-116		%REC	1	12/26/2013 11:39:34 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	23	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Toluene	45	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Ethylbenzene	1.3	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,4-Trimethylbenzene	2.7	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Naphthalene	12	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Methylnaphthalene	5.8	4.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Acetone	58	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774

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

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- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
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- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001 **Matrix:** AQUEOUS **Received Date:** 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Butanone	27	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,3-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Styrene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	12	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Xylenes, Total	19	1.5		µg/L	1	12/29/2013 7:47:46 PM	R15774
Surr: 1,2-Dichloroethane-d4	95.2	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
Surr: Dibromofluoromethane	103	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
Surr: Toluene-d8	100	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	12/27/2013	10991
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	36	12		µg/L	5	1/8/2014	11134
SM4500-H+B: PH						Analyst: **JML**	
pH	7.33	1.68	H	pH units	1	12/26/2013 3:28:37 PM	R15744
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	440	20		mg/L CaCO3	1	12/26/2013 3:28:37 PM	R15744
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/26/2013 3:28:37 PM	R15744
Total Alkalinity (as CaCO3)	440	20		mg/L CaCO3	1	12/26/2013 3:28:37 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1190	40.0	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1312B40-002
Matrix: TRIP BLANK
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 3:55:28 PM	10989
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Toluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Naphthalene	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Acetone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromoform	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromomethane	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Butanone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Carbon disulfide	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chloroethane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chloroform	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chloromethane	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1312B40-002
Matrix: TRIP BLANK
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Hexanone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Styrene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/28/2013 8:43:59 AM	R15774
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774
Surr: Dibromofluoromethane	111	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774
Surr: Toluene-d8	96.5	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774

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

Qualifiers:

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

Anatek Labs, Inc.

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131227021
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312B40
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131227021-001	**Sampling Date**	12/21/2013	**Date/Time Received**	12/27/2013 12:23 PM
Client Sample ID	1312B40-001M / LDG 47-7	**Sampling Time**	1:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number	131227021-002	**Sampling Date**	12/21/2013	**Date/Time Received**	12/27/2013 12:23 PM
Client Sample ID	1312B40-001O / LDG 47-7	**Sampling Time**	1:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	0.243	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E87109

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B13121948-001
Client Sample ID: 1312B40-001K-L, LDG 47-7

Report Date: 01/09/14
Collection Date: 12/21/13 13:00
DateReceived: 12/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, DISSOLVED							
Lithium	1.0	mg/L		0.1		E200.7	12/30/13 13:27 / rlh
Rubidium	0.24	mg/L		0.01		E200.8	01/09/14 11:38 / jjw
Tungsten	ND	mg/L		0.1		E200.8	01/09/14 11:38 / jjw
RADIONUCLIDES							
Radon 222	-33.4	pCi/L	UH			D5072-92	12/31/13 12:25 / eli-ca
Radon 222 precision (±)	185	pCi/L	H			D5072-92	12/31/13 12:25 / eli-ca
Radon 222 MDC	322	pCi/L	H			D5072-92	12/31/13 12:25 / eli-ca

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Report Date: 01/09/14
Project: Not Indicated
Work Order: B13121948

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_131230A	
Sample ID: ICV		Continuing Calibration Verification Standard							12/30/13 10:48	
Lithium		1.20	mg/L	0.10	96	95	105			
Method: E200.7									Batch: R217135	
Sample ID: MB-6500DIS131230A		Method Blank				Run: ICP203-B_131230A			12/30/13 11:11	
Lithium		ND	mg/L	0.0003						
Sample ID: LFB-6500DIS131230A		Laboratory Fortified Blank				Run: ICP203-B_131230A			12/30/13 11:15	
Lithium		1.02	mg/L	0.10	102	85	115			
Sample ID: B13121948-001AMS2		Sample Matrix Spike				Run: ICP203-B_131230A			12/30/13 13:35	
Lithium		6.00	mg/L	0.10	101	70	130			
Sample ID: B13121948-001AMSD2		Sample Matrix Spike Duplicate				Run: ICP203-B_131230A			12/30/13 13:38	
Lithium		6.30	mg/L	0.10	107	70	130	4.8	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 01/09/14
Work Order: B13121948

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS203-B_140109A	
Sample ID: QCS-	2	Initial Calibration Verification Standard							01/09/14 09:38	
Rubidium		0.0527	mg/L	0.010	105	90	110			
Tungsten		0.0526	mg/L	0.10	105	90	110			
Method: E200.8									Batch: R217575	
Sample ID: LFB	2	Laboratory Fortified Blank				Run: ICPMS203-B_140109A			01/09/14 09:54	
Rubidium		0.0492	mg/L	0.010	98	85	115			
Tungsten		0.0508	mg/L	0.10	102	85	115			
Sample ID: LRB	2	Method Blank				Run: ICPMS203-B_140109A			01/09/14 10:22	
Rubidium		ND	mg/L	0.001						
Tungsten		ND	mg/L	0.001						
Sample ID: B13121948-001AMS	2	Sample Matrix Spike				Run: ICPMS203-B_140109A			01/09/14 11:54	
Rubidium		0.186	mg/L	0.010		70	130			A
Tungsten		0.141	mg/L	0.10	137	70	130			S
Sample ID: B13121948-001AMSD	2	Sample Matrix Spike Duplicate				Run: ICPMS203-B_140109A			01/09/14 11:58	
Rubidium		0.183	mg/L	0.010		70	130	1.5	20	A
Tungsten		0.138	mg/L	0.10	131	70	130	2.1	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 01/02/14
Work Order: B13121948

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92									Batch: R182194
Sample ID: B13121948-001BDUP	Sample Duplicate				Run: PACKARD 3100TR_131231A				12/31/13 12:25
Radon 222	53.2	pCi/L					870	20	UR
Radon 222 precision (±)	187	pCi/L							
Radon 222 MDC	322	pCi/L							
- The Sample and the Duplicate are both below the MDC. The RPD is acceptable.									
Sample ID: MB-R182194	Method Blank				Run: PACKARD 3100TR_131231A				12/31/13 12:25
Radon 222	10	pCi/L							U
Radon 222 precision (±)	30	pCi/L							
Radon 222 MDC	50	pCi/L							
Sample ID: LCS-R182194	Laboratory Control Sample				Run: PACKARD 3100TR_131231A				12/31/13 12:25
Radon 222	548	pCi/L		94	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312B40
Pace Project No.: 30110466

Sample: 1312B40-001 LDG 47-7 **Lab ID: 30110466001** Collected: 12/21/13 13:00 Received: 12/27/13 09:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0340 ± 0.481 (0.981)**	pCi/L	01/10/14 16:13	13982-63-3	
Radium-228	EPA 904.0	**-0.191 ± 0.378 (0.924)**	pCi/L	01/14/14 15:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312B40
Pace Project No.: 30110466

QC Batch: RADC/18217
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30110466001

METHOD BLANK: 675523
Matrix: Water
Associated Lab Samples: 30110466001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.139 ± 0.532 (0.990)	pCi/L	01/10/14 15:26	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312B40
Pace Project No.: 30110466

QC Batch: RADC/18211
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30110466001

METHOD BLANK: 675092
Matrix: Water
Associated Lab Samples: 30110466001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.120 ± 0.275 (0.611)	pCi/L	01/14/14 11:53	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Cobalt	0.51	0.0060	0.5000	0	101	85	115			
Copper	0.51	0.0060	0.5000	0	102	85	115			
Manganese	0.53	0.0020	0.5000	0	105	85	115			
Molybdenum	0.52	0.0080	0.5000	0	103	85	115			
Nickel	0.50	0.010	0.5000	0	99.4	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	103	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456073** 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								

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R15805** RunNo: **15805**
Prep Date: Analysis Date: **12/30/2013** SeqNo: **456074** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	85	115			
Iron	0.54	0.020	0.5000	0	107	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID **1312B40-001JMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LDG 47-7** Batch ID: **R15805** RunNo: **15805**
Prep Date: Analysis Date: **12/30/2013** SeqNo: **456137** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	61	1.0	50.00	12.45	96.3	70	130			
Iron	0.81	0.020	0.5000	0.3210	96.9	70	130			
Magnesium	49	1.0	50.00	0.5473	96.3	70	130			
Potassium	70	1.0	50.00	21.92	96.5	70	130			

'ample ID **1312B40-001JMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
lient ID: **LDG 47-7** Batch ID: **R15805** RunNo: **15805**
Prep Date: Analysis Date: **12/30/2013** SeqNo: **456138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	60	1.0	50.00	12.45	95.0	70	130	1.05	20	
Iron	0.81	0.020	0.5000	0.3210	98.2	70	130	0.793	20	
Magnesium	48	1.0	50.00	0.5473	95.2	70	130	1.17	20	
Potassium	70	1.0	50.00	21.92	95.2	70	130	0.905	20	

Sample ID **1312B40-001JMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LDG 47-7** Batch ID: **R15921** RunNo: **15921**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459107** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.63	0.020	0.5000	0.04959	116	70	130			

Sample ID **1312B40-001JMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LDG 47-7** Batch ID: **R15921** RunNo: **15921**
Prep Date: Analysis Date: **1/7/2014** SeqNo: **459108** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.64	0.020	0.5000	0.04959	118	70	130	2.02	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15921**	RunNo: **15921**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15921**	RunNo: **15921**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459139** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	111	85	115			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.7	85	115			
Lead	0.026	0.0010	0.02500	0	104	85	115			
Selenium	0.023	0.0010	0.02500	0	93.5	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	**MB-11092**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**11092**	RunNo:	**15947**					
Prep Date:	**1/6/2014**	Analysis Date:	**1/7/2014**	SeqNo:	**459682**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-11092**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**11092**	RunNo:	**15947**					
Prep Date:	**1/6/2014**	Analysis Date:	**1/7/2014**	SeqNo:	**459683**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454474** Units: **mg/L**

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

Sample ID **LCS-b** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.7	0.50	5.000	0	94.1	90	110			
Bromide	2.5	0.10	2.500	0	98.7	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	95.0	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

ample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.7	0.10	1.600	0	108	90	110			
Chloride	7.9	0.50	8.000	0	98.4	90	110			
Bromide	8.1	0.10	8.000	0	101	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.4	90	110			
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454496** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	109	90	110			
Chloride	4.8	0.50	5.000	0	95.6	90	110			
Bromide	5.0	0.10	5.000	0	99.4	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.7	90	110			
Sulfate	12	0.50	12.50	0	97.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1312B40-001GMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LDG 47-7**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454504** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.8	0.10	2.500	0.3221	99.7	85.9	111			

Sample ID **1312B40-001GMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LDG 47-7**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454505** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.8	0.10	2.500	0.3221	100	85.9	111	0.397	20	

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454508** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.8	0.10	1.600	0	109	90	110			
Chloride	8.0	0.50	8.000	0	99.5	90	110			
Bromide	8.1	0.10	8.000	0	101	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.9	90	110			
Sulfate	20	0.50	20.00	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454513** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	107	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			
Bromide	5.0	0.10	5.000	0	100	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.9	90	110			
Sulfate	12	0.50	12.50	0	97.8	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455808** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	13	0.20	12.00	0	106	90	110			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455810**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455811**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.6	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455820**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.9	0.20	5.000	0	98.0	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
lient ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455832**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.1	0.20	8.000	0	102	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455844**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.9	0.20	5.000	0	98.2	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455883**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.1	0.20	8.000	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/28/2013**	SeqNo: **455895**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.9	0.20	5.000	0	97.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/28/2013**	SeqNo: **455907**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	7.9	0.20	8.000	0	99.2	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**							
Prep Date:	Analysis Date: **12/28/2013**	SeqNo: **455915**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

Hall Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10991**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10991**	RunNo: **15761**
Prep Date: **12/26/2013**	Analysis Date: **12/27/2013**	SeqNo: **454975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10991**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10991**	RunNo: **15761**
Prep Date: **12/26/2013**	Analysis Date: **12/27/2013**	SeqNo: **454976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.3	1.0	5.000	0	106	80	120			

Sample ID **LCSD-10991**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10991**	RunNo: **15761**
Prep Date: **12/26/2013**	Analysis Date: **12/27/2013**	SeqNo: **454977** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.4	1.0	5.000	0	108	80	120	2.24	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10989**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10989**	RunNo: **15731**
Prep Date: **12/26/2013**	Analysis Date: **12/26/2013**	SeqNo: **454148** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10989**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10989**	RunNo: **15731**
Prep Date: **12/26/2013**	Analysis Date: **12/26/2013**	SeqNo: **454165** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10979**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/29/2013**	SeqNo: **455290** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		82.4	17	123			
Surr: Tetrachloro-m-xylene	2.0		2.500		81.6	22.6	113			

Sample ID **LCS-10979**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/31/2013**	SeqNo: **456267** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
ıclor 1260	3.7	1.0	5.000	0	74.1	35.7	137			
Surr: Decachlorobiphenyl	2.8		2.500		113	17	123			
Surr: Tetrachloro-m-xylene	2.9		2.500		116	22.6	113			S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
is-1,3-Dichloropropene	ND	1.0								
_,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	99.3	82.2	124			
Chlorobenzene	19	1.0	20.00	0	94.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	116	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	91.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
'sopropylbenzene	ND	1.0								
;opropyltoluene	ND	1.0								
Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455220** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	95.1	82.2	124			
Chlorobenzene	19	1.0	20.00	0	93.5	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	93.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		55.1	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	23.3	111			
Surr: Nitrobenzene-d5	69		100.0		68.8	36.8	111			
Surr: 2-Fluorobiphenyl	71		100.0		70.6	38.3	110			
Surr: 4-Terphenyl-d14	77		100.0		77.5	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcs-10980** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **10980** RunNo: **15747**

Prep Date: **12/24/2013** Analysis Date: **12/26/2013** SeqNo: **454621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	65.8	48	101			
4-Chloro-3-methylphenol	130	10	200.0	0	66.5	47.9	109			
2-Chlorophenol	120	10	200.0	0	59.5	40	105			
1,4-Dichlorobenzene	57	10	100.0	0	57.2	40.8	94.3			
2,4-Dinitrotoluene	64	10	100.0	0	64.1	28.3	131			
N-Nitrosodi-n-propylamine	66	10	100.0	0	65.6	46.2	119			
4-Nitrophenol	44	10	200.0	0	21.9	10.5	67.9			
Pentachlorophenol	53	20	200.0	0	26.7	22.4	81.1			
Phenol	73	10	200.0	0	36.7	21.4	72.9			
Pyrene	61	10	100.0	0	60.9	46.9	109			
1,2,4-Trichlorobenzene	55	10	100.0	0	54.6	43.1	98.4			
Surr: 2-Fluorophenol	94		200.0		47.1	22.7	98			
Surr: Phenol-d5	72		200.0		36.0	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	60		100.0		59.7	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		67.9	38.3	110			
Surr: 4-Terphenyl-d14	72		100.0		71.6	52.1	116			

Sample ID **lcsd-10980** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **10980** RunNo: **15747**

Prep Date: **12/24/2013** Analysis Date: **12/26/2013** SeqNo: **454622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	48	101	13.8	25	
4-Chloro-3-methylphenol	150	10	200.0	0	74.3	47.9	109	11.1	32.7	
2-Chlorophenol	120	10	200.0	0	62.4	40	105	4.89	20	
1,4-Dichlorobenzene	60	10	100.0	0	60.1	40.8	94.3	4.94	20	
2,4-Dinitrotoluene	68	10	100.0	0	68.5	28.3	131	6.64	29.9	
N-Nitrosodi-n-propylamine	69	10	100.0	0	69.0	46.2	119	5.17	23.1	
4-Nitrophenol	48	10	200.0	0	24.0	10.5	67.9	8.93	40.5	
Pentachlorophenol	70	20	200.0	0	35.0	22.4	81.1	27.2	37.3	
Phenol	77	10	200.0	0	38.4	21.4	72.9	4.45	20	
Pyrene	74	10	100.0	0	73.8	46.9	109	19.2	26.5	
1,2,4-Trichlorobenzene	59	10	100.0	0	59.4	43.1	98.4	8.32	27.2	
Surr: 2-Fluorophenol	92		200.0		45.9	22.7	98	0	0	
Surr: Phenol-d5	74		200.0		36.8	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		70.5	23.3	111	0	0	
Surr: Nitrobenzene-d5	63		100.0		62.9	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	73		100.0		72.6	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcsd-10980**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	81		100.0		80.5	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10981** SampType: **MBLK** TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW** Batch ID: **10981** RunNo: **15775**
Prep Date: **12/24/2013** Analysis Date: **12/27/2013** SeqNo: **455252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
ɲzo(g,h,i)perylene	ND	0.12								
ɹeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	22		20.00		108	24.5	139			

Sample ID **LCS-10981** SampType: **LCS** TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW** Batch ID: **10981** RunNo: **15775**
Prep Date: **12/24/2013** Analysis Date: **12/27/2013** SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	0	53.2	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	45.1	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	41.9	36.6	89.6			
Acenaphthylene	47	2.5	80.20	0	58.3	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.6	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.4	0.60	4.020	0	60.4	43.9	111			
Anthracene	2.3	0.60	4.020	0	57.2	44.3	103			
Fluoranthene	4.5	0.30	8.020	0	56.2	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.2	32.6	103			
Benz(a)anthracene	0.47	0.070	0.8020	0	58.6	43	114			
Chrysene	2.2	0.20	4.020	0	55.2	40.2	100			
Benzo(b)fluoranthene	0.59	0.10	1.002	0	58.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.30	0.070	0.5020	0	59.8	34.5	118			
Dibenz(a,h)anthracene	0.60	0.12	1.002	0	59.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	42.4	113			
Surr: Benzo(e)pyrene	16		20.00		77.8	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-11134**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459499** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-11134**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	110	73.7	135			

Sample ID **LCSD-11134**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSS02**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	73.7	135	17.9	21.4	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-1**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454539** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454540** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10984**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454897** 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-10984**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454898** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312B40 | RcptNo: 1

Received by/date: MG 12/24/13

Logged By: Michelle Garcia 12/24/2013 10:30:00 AM Michelle Garcia

Completed By: Michelle Garcia 12/24/2013 12:30:27 PM Michelle Garcia

Reviewed By: TO 12/24/2013

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

Special Handling (if applicable)

16. 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: _____

17. Additional remarks: As per analyst request, poured off from unpreserved sample, filtered, and preserved for additional volume for dissolved metals on 1/8/14. lcms.

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	.0	Good	Yes			

Chain-of-Custody Record

Client: AMEC

Mailing Address: 8519 Jefferson St NE
Albuquerque NM 87113

Phone #: 505.821.1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) Excel per DJ 01/06/14 AS

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Lightning Dock Geothermal
GW Quality Monitoring

Project #:
11-517-00102.06

Project Manager:
David Janney

Sampler: Charles D. Guilly

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0C

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. 1312840	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12/21/13	1300	Water	LDG 47-7	21		-001																
			Trip Blank	3																		
			Note: 2 x 125 HNO_3 samples (Dissolved Metals) were not filtered.																			

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/23/13	10:10a	Charles D. Guilly			
Date:	Time:	Relinquished by:	Received by:	Date	Time
				12/24/13	1030

Remarks: See attached analyte list.

12/02/13 /AT
Use this list

CYRQ ENERGY WCICC BOTTLES FOR 1 SAMPLE

TEST	BOTTLE TYPE/PRESERVATIVE
8260	3 x 40 ml HCl Voa's
EDB-504.1	2 x 40 ml voa's Na2S203
1082-PCB	1 x ltr unpreserved amber
8310-PAH	1 x ltr unpreserved amber
8270-SV0C	1 x ltr unpreserved amber
Phenols	1 x ltr H2S04 amber
Anions, TDS, pH, SO4, Cl, PSO4, Carbonate, Bicarbonate, Total Alk TDS, pH	1 x 500 unpreserved plastic 1 x 125 H2S04 plastic
Mercury	1 x 500 HN03 plastic
Dissolved Metals/Cations l, As, Ag, B, Ba, Be, Cd, Cu, Co, Fe, F, / Ca, Na, K, P g, Li, Mn, Mg, Mo, Ni, Pb, Se, Ru, W, Zn, U	2 x 125 HN03 plastic
18.1 TPH	1 x 500 HCl amber
otal Phosphorus	Ask Hall
adon	"
Y N	"
adium 226/228	"

Note Li, Ru, W on COC

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December 16, 2013

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113
TEL: (505) 796-7276
FAX (505) 821-7371

RE: Lightning Dock Geothermal Water Quality Monitoring OrderNo.: 1311B14

Dear David Janney:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/26/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

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Case Narrative

WO#: **1311B14**
Date: **12/16/2013**

CLIENT: AMEC
Project: Lightning Dock Geothermal Water Quality Moni

Analytical Notes Regarding EPA Method 418.1:
Sample MW-3 The addition of silica gel to the sample extract is performed to remove the grease portion in the sample result. The extract went through 10 silica gel steps before running out of extract. The sample result of 1.1mg/L is likely to be non petroleum related hydrocarbons. The sample result should be considered estimated.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 2:16:33 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:16:33 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:16:33 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 2:16:33 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 2:16:33 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 2:16:33 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 2:16:33 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 2:16:33 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 2:16:33 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 2:16:33 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 2:16:33 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 2:16:33 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 2:16:33 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 2:16:33 PM	10572
Surr: Benzo(e)pyrene	107	24.5-139		%REC	1	12/3/2013 2:16:33 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	7.7	0.50	*	mg/L	5	11/26/2013 6:48:08 PM	R15112
Chloride	100	10		mg/L	20	11/26/2013 7:00:33 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 6:48:08 PM	R15112
Nitrogen, Nitrate (As N)	2.6	0.50		mg/L	5	11/26/2013 6:48:08 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	11/26/2013 6:48:08 PM	R15112
Sulfate	670	10	*	mg/L	20	11/26/2013 7:00:33 PM	R15112
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.034	0.020		mg/L	1	12/4/2013 6:20:46 PM	R15245
Barium	0.063	0.0020		mg/L	1	12/4/2013 6:20:46 PM	R15245
Boron	0.70	0.20		mg/L	5	12/4/2013 6:32:25 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 6:20:46 PM	R15245
Calcium	51	1.0		mg/L	1	12/4/2013 6:20:46 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 6:20:46 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 6:20:46 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:37:05 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:37:05 PM	R15267
Magnesium	2.1	1.0		mg/L	1	12/4/2013 6:20:46 PM	R15245
Manganese	0.21	0.0020	*	mg/L	1	12/4/2013 6:20:46 PM	R15245

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

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Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.058	0.0080		mg/L	1	12/4/2013 6:20:46 PM	R15245
Nickel	ND	0.010		mg/L	1	12/4/2013 6:20:46 PM	R15245
Potassium	22	1.0		mg/L	1	12/4/2013 6:20:46 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 6:20:46 PM	R15245
Sodium	400	5.0		mg/L	5	12/4/2013 6:32:25 PM	R15245
Zinc	ND	0.010		mg/L	1	12/5/2013 1:37:05 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0055	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
Selenium	0.0052	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
Uranium	0.011	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.00079	0.00020		mg/L	1	12/4/2013 5:46:41 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570

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Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570

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

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

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CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
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Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Surr: 2-Fluorophenol	44.5	22.7-98		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: Phenol-d5	34.1	23.4-74.9		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: 2,4,6-Tribromophenol	63.1	23.3-111		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: Nitrobenzene-d5	52.3	36.8-111		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: 2-Fluorobiphenyl	60.7	38.3-110		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: 4-Terphenyl-d14	64.5	52.1-116		%REC	1	12/2/2013 2:02:14 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chloroform	28	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104

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EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104

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

Qualifiers:

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

Analytical Report
Lab Order **1311B14**
Date Reported: **12/16/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001 **Matrix:** AQUEOUS **Received Date:** 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 4:26:34 PM	R15104
Surr: 1,2-Dichloroethane-d4	95.9	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
Surr: Dibromofluoromethane	103	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
Surr: Toluene-d8	96.6	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.1		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2000	0.010		µmhos/cm	1	11/27/2013 8:57:38 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.69	1.68	H	pH units	1	11/27/2013 8:57:38 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	220	20		mg/L CaCO3	1	11/27/2013 8:57:38 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 8:57:38 PM	R15156
Total Alkalinity (as CaCO3)	220	20		mg/L CaCO3	1	11/27/2013 8:57:38 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1780	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 2:45:54 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:45:54 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:45:54 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 2:45:54 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 2:45:54 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 2:45:54 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 2:45:54 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 2:45:54 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 2:45:54 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 2:45:54 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 2:45:54 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 2:45:54 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 2:45:54 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 2:45:54 PM	10572
Surr: Benzo(e)pyrene	135	24.5-139		%REC	1	12/3/2013 2:45:54 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	11	0.50	*	mg/L	5	11/26/2013 7:12:58 PM	R15112
Chloride	96	2.5		mg/L	5	11/26/2013 7:12:58 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 7:12:58 PM	R15112
Nitrogen, Nitrate (As N)	3.1	0.50		mg/L	5	11/26/2013 7:12:58 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	11/26/2013 7:12:58 PM	R15112
Sulfate	510	10	*	mg/L	20	11/26/2013 7:25:22 PM	R15112
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.049	0.020		mg/L	1	12/4/2013 6:43:12 PM	R15245
Barium	0.044	0.0020		mg/L	1	12/4/2013 6:43:12 PM	R15245
Boron	0.37	0.040		mg/L	1	12/4/2013 6:43:12 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 6:43:12 PM	R15245
Calcium	26	1.0		mg/L	1	12/4/2013 6:43:12 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 6:43:12 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 6:43:12 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:39:03 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:39:03 PM	R15267
Magnesium	ND	1.0		mg/L	1	12/4/2013 6:43:12 PM	R15245
Manganese	0.041	0.0020		mg/L	1	12/4/2013 6:43:12 PM	R15245

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.027	0.0080		mg/L	1	12/4/2013 6:43:12 PM	R15245
Nickel	ND	0.010		mg/L	1	12/4/2013 6:43:12 PM	R15245
Potassium	14	1.0		mg/L	1	12/4/2013 6:43:12 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 6:43:12 PM	R15245
Sodium	310	5.0		mg/L	5	12/4/2013 6:46:59 PM	R15245
Zinc	0.015	0.010		mg/L	1	12/5/2013 1:39:03 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0032	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
Selenium	0.0035	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
Uranium	ND	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/4/2013 5:48:29 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Surr: 2-Fluorophenol	57.6	22.7-98		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: Phenol-d5	42.0	23.4-74.9		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: 2,4,6-Tribromophenol	78.5	23.3-111		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: Nitrobenzene-d5	69.9	36.8-111		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: 2-Fluorobiphenyl	69.2	38.3-110		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: 4-Terphenyl-d14	78.5	52.1-116		%REC	1	12/2/2013 2:31:05 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chloroform	4.9	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 5:53:08 PM	R15104
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
Surr: Dibromofluoromethane	103	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
Surr: Toluene-d8	100	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.2		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	1600	0.010		µmhos/cm	1	11/27/2013 9:09:43 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.60	1.68	H	pH units	1	11/27/2013 9:09:43 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:09:43 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:09:43 PM	R15156
Total Alkalinity (as CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:09:43 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1380	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 3:15:15 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:15:15 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:15:15 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 3:15:15 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 3:15:15 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 3:15:15 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 3:15:15 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 3:15:15 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 3:15:15 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 3:15:15 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 3:15:15 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 3:15:15 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 3:15:15 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 3:15:15 PM	10572
Surr: Benzo(e)pyrene	112	24.5-139		%REC	1	12/3/2013 3:15:15 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	11	0.50	*	mg/L	5	11/26/2013 7:37:47 PM	R15112
Chloride	96	2.5		mg/L	5	11/26/2013 7:37:47 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 7:37:47 PM	R15112
Nitrogen, Nitrate (As N)	3.2	0.50		mg/L	5	11/26/2013 7:37:47 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	11/26/2013 7:37:47 PM	R15112
Sulfate	510	10	*	mg/L	20	11/26/2013 7:50:11 PM	R15112
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.024	0.020		mg/L	1	12/4/2013 6:55:38 PM	R15245
Barium	0.043	0.0020		mg/L	1	12/4/2013 6:55:38 PM	R15245
Boron	0.36	0.040		mg/L	1	12/4/2013 6:55:38 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 6:55:38 PM	R15245
Calcium	26	1.0		mg/L	1	12/4/2013 6:55:38 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 6:55:38 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 6:55:38 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:40:57 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:40:57 PM	R15267
Magnesium	ND	1.0		mg/L	1	12/4/2013 6:55:38 PM	R15245
Manganese	0.036	0.0020		mg/L	1	12/4/2013 6:55:38 PM	R15245

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003 **Matrix:** AQUEOUS **Received Date:** 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.026	0.0080		mg/L	1	12/4/2013 6:55:38 PM	R15245
Nickel	ND	0.010		mg/L	1	12/4/2013 6:55:38 PM	R15245
Potassium	15	1.0		mg/L	1	12/4/2013 6:55:38 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 6:55:38 PM	R15245
Sodium	310	5.0		mg/L	5	12/4/2013 6:59:27 PM	R15245
Zinc	ND	0.010		mg/L	1	12/5/2013 1:40:57 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0083	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
Selenium	0.0035	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
Uranium	ND	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/4/2013 5:53:59 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Surr: 2-Fluorophenol	38.8	22.7-98		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: Phenol-d5	29.9	23.4-74.9		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: 2,4,6-Tribromophenol	65.6	23.3-111		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: Nitrobenzene-d5	49.1	36.8-111		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: 2-Fluorobiphenyl	51.5	38.3-110		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: 4-Terphenyl-d14	75.9	52.1-116		%REC	1	12/2/2013 2:59:56 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chloroform	5.2	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 6:50:39 PM	R15104
Surr: 1,2-Dichloroethane-d4	98.0	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
Surr: Dibromofluoromethane	100	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
Surr: Toluene-d8	93.7	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.1		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	1500	0.010		µmhos/cm	1	11/27/2013 9:17:47 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.58	1.68	H	pH units	1	11/27/2013 9:17:47 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:17:47 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:17:47 PM	R15156
Total Alkalinity (as CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:17:47 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1210	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 3:44:29 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:44:29 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:44:29 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 3:44:29 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 3:44:29 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 3:44:29 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 3:44:29 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 3:44:29 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 3:44:29 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 3:44:29 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 3:44:29 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 3:44:29 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 3:44:29 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 3:44:29 PM	10572
Surr: Benzo(e)pyrene	136	24.5-139		%REC	1	12/3/2013 3:44:29 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	12	0.50	*	mg/L	5	11/26/2013 8:27:26 PM	R15112
Chloride	94	10		mg/L	20	11/26/2013 8:39:50 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 8:27:26 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	11/26/2013 8:27:26 PM	R15112
Sulfate	540	10	*	mg/L	20	11/26/2013 8:39:50 PM	R15112
Nitrate+Nitrite as N	2.1	1.0		mg/L	5	12/7/2013 3:55:41 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.31	0.020	*	mg/L	1	12/4/2013 7:17:10 PM	R15245
Barium	0.060	0.0020		mg/L	1	12/4/2013 7:17:10 PM	R15245
Boron	0.44	0.040		mg/L	1	12/4/2013 7:17:10 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:17:10 PM	R15245
Calcium	24	1.0		mg/L	1	12/4/2013 7:17:10 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:17:10 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:17:10 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:42:50 PM	R15267
Iron	0.24	0.020		mg/L	1	12/5/2013 1:42:50 PM	R15267
Magnesium	ND	1.0		mg/L	1	12/4/2013 7:17:10 PM	R15245
Manganese	0.18	0.0020	*	mg/L	1	12/4/2013 7:17:10 PM	R15245

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.065	0.0080		mg/L	1	12/4/2013 7:17:10 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:42:50 PM	R15267
Potassium	17	1.0		mg/L	1	12/4/2013 7:17:10 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:17:10 PM	R15245
Sodium	330	5.0		mg/L	5	12/4/2013 7:21:02 PM	R15245
Zinc	ND	0.010		mg/L	1	12/5/2013 1:42:50 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.019	0.0010	*	mg/L	1	12/10/2013 2:22:00 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:22:00 PM	R15392
Selenium	0.0034	0.0010		mg/L	1	12/10/2013 2:22:00 PM	R15392
Uranium	ND	0.0010		mg/L	1	12/10/2013 2:22:00 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.00034	0.00020		mg/L	1	12/4/2013 5:55:47 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzoic acid	41	40		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Surr: 2-Fluorophenol	39.0	22.7-98		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: Phenol-d5	30.9	23.4-74.9		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: 2,4,6-Tribromophenol	64.6	23.3-111		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: Nitrobenzene-d5	50.6	36.8-111		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: 2-Fluorobiphenyl	59.8	38.3-110		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: 4-Terphenyl-d14	59.8	52.1-116		%REC	1	12/2/2013 3:28:59 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Toluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Ethylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,4-Trimethylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,3,5-Trimethylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Naphthalene	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
1-Methylnaphthalene	ND	40		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Methylnaphthalene	ND	40		µg/L	10	11/26/2013 7:19:21 PM	R15104
Acetone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromodichloromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromoform	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromomethane	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Butanone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Carbon disulfide	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Carbon Tetrachloride	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chloroethane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chloroform	21	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chloromethane	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Chlorotoluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
cis-1,2-DCE	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
cis-1,3-Dichloropropene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
Dibromochloromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Dibromomethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,3-Dichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,4-Dichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Dichlorodifluoromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1-Dichloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1-Dichloroethene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dichloropropane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,3-Dichloropropane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
2,2-Dichloropropane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1-Dichloropropene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Hexachlorobutadiene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Hexanone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Isopropylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
4-Isopropyltoluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
4-Methyl-2-pentanone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Methylene Chloride	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
n-Butylbenzene	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
n-Propylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
sec-Butylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Styrene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
tert-Butylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
Tetrachloroethene (PCE)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
trans-1,2-DCE	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
trans-1,3-Dichloropropene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,3-Trichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,4-Trichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,1-Trichloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,2-Trichloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Trichloroethene (TCE)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Trichlorofluoromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,3-Trichloropropane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Xylenes, Total	ND	15		µg/L	10	11/26/2013 7:19:21 PM	R15104
Surr: 1,2-Dichloroethane-d4	93.0	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
Surr: 4-Bromofluorobenzene	103	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
Surr: Dibromofluoromethane	98.0	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
Surr: Toluene-d8	98.6	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	1.1	1.1	E	mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	1600	0.010		µmhos/cm	1	11/27/2013 9:25:49 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	8.00	1.68	H	pH units	1	11/27/2013 9:25:49 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	47	20		mg/L CaCO3	1	11/27/2013 9:25:49 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:25:49 PM	R15156
Total Alkalinity (as CaCO3)	47	20		mg/L CaCO3	1	11/27/2013 9:25:49 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1330	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 4:43:01 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 4:43:01 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 4:43:01 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 4:43:01 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 4:43:01 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 4:43:01 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 4:43:01 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 4:43:01 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 4:43:01 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 4:43:01 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 4:43:01 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 4:43:01 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 4:43:01 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 4:43:01 PM	10572
Surr: Benzo(e)pyrene	63.4	24.5-139		%REC	1	12/3/2013 4:43:01 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	4.3	2.0	*	mg/L	20	11/26/2013 9:04:40 PM	R15112
Chloride	710	25	*	mg/L	50	11/27/2013 7:56:32 PM	R15178
Bromide	2.2	0.10		mg/L	1	12/7/2013 5:22:32 AM	R15322
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/9/2013 10:24:41 PM	R15376
Sulfate	1200	25	*	mg/L	50	11/27/2013 7:56:32 PM	R15178
Nitrate+Nitrite as N	12	2.0	*	mg/L	10	12/7/2013 4:08:05 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	ND	0.020		mg/L	1	12/4/2013 7:24:33 PM	R15245
Barium	0.059	0.0020		mg/L	1	12/4/2013 7:24:33 PM	R15245
Boron	0.22	0.040		mg/L	1	12/4/2013 7:24:33 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:24:33 PM	R15245
Calcium	200	5.0		mg/L	5	12/4/2013 7:28:19 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:24:33 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:24:33 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:44:48 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:44:48 PM	R15267
Magnesium	14	1.0		mg/L	1	12/4/2013 7:24:33 PM	R15245
Manganese	0.15	0.0020	*	mg/L	1	12/4/2013 7:24:33 PM	R15245

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.014	0.0080		mg/L	1	12/4/2013 7:24:33 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:44:48 PM	R15267
Potassium	40	1.0		mg/L	1	12/4/2013 7:24:33 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:24:33 PM	R15245
Sodium	860	20		mg/L	20	12/5/2013 1:46:49 PM	R15267
Zinc	0.048	0.010		mg/L	1	12/5/2013 1:44:48 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.012	0.0010	*	mg/L	1	12/10/2013 2:24:39 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:24:39 PM	R15392
Selenium	0.033	0.0010		mg/L	1	12/10/2013 2:24:39 PM	R15392
Uranium	0.0051	0.0010		mg/L	1	12/10/2013 2:24:39 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/4/2013 5:57:38 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Surr: 2-Fluorophenol	46.2	22.7-98		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: Phenol-d5	36.4	23.4-74.9		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: 2,4,6-Tribromophenol	69.4	23.3-111		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: Nitrobenzene-d5	53.3	36.8-111		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: 2-Fluorobiphenyl	63.4	38.3-110		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: 4-Terphenyl-d14	66.5	52.1-116		%REC	1	12/2/2013 3:57:51 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 8:16:46 PM	R15104
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
Surr: Dibromofluoromethane	101	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
Surr: Toluene-d8	95.3	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	4300	0.010		µmhos/cm	1	11/27/2013 9:33:03 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.38	1.68	H	pH units	1	11/27/2013 9:33:03 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	110	20		mg/L CaCO3	1	11/27/2013 9:33:03 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:33:03 PM	R15156
Total Alkalinity (as CaCO3)	110	20		mg/L CaCO3	1	11/27/2013 9:33:03 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	3210	40.0	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 6:10:52 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:10:52 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:10:52 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 6:10:52 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 6:10:52 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 6:10:52 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 6:10:52 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 6:10:52 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 6:10:52 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 6:10:52 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 6:10:52 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 6:10:52 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 6:10:52 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 6:10:52 PM	10572
Surr: Benzo(e)pyrene	60.6	24.5-139		%REC	1	12/3/2013 6:10:52 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	1.3	0.50		mg/L	5	11/26/2013 9:17:05 PM	R15112
Chloride	230	10		mg/L	20	11/26/2013 9:29:30 PM	R15112
Bromide	1.2	0.50		mg/L	5	11/26/2013 9:17:05 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	11/26/2013 9:17:05 PM	R15112
Sulfate	930	10	*	mg/L	20	11/26/2013 9:29:30 PM	R15112
Nitrate+Nitrite as N	42	2.0	*	mg/L	10	12/7/2013 4:20:30 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	ND	0.020		mg/L	1	12/4/2013 7:31:59 PM	R15245
Barium	0.041	0.0020		mg/L	1	12/4/2013 7:31:59 PM	R15245
Boron	0.31	0.040		mg/L	1	12/4/2013 7:31:59 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:31:59 PM	R15245
Calcium	220	5.0		mg/L	5	12/4/2013 7:35:37 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:31:59 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:31:59 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:48:49 PM	R15267
Iron	0.021	0.020		mg/L	1	12/5/2013 1:48:49 PM	R15267
Magnesium	38	1.0		mg/L	1	12/4/2013 7:31:59 PM	R15245
Manganese	0.27	0.0020	*	mg/L	1	12/4/2013 7:31:59 PM	R15245

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.031	0.0080		mg/L	1	12/4/2013 7:31:59 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:48:49 PM	R15267
Potassium	16	1.0		mg/L	1	12/4/2013 7:31:59 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:31:59 PM	R15245
Sodium	330	5.0		mg/L	5	12/4/2013 7:35:37 PM	R15245
Zinc	0.023	0.010		mg/L	1	12/5/2013 1:48:49 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0060	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
Selenium	0.028	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
Uranium	0.014	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.0010	0.00020		mg/L	1	12/4/2013 5:59:29 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Surr: 2-Fluorophenol	48.4	22.7-98		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: Phenol-d5	39.0	23.4-74.9		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: 2,4,6-Tribromophenol	64.7	23.3-111		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: Nitrobenzene-d5	60.9	36.8-111		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: 2-Flucrobiphenyl	66.4	38.3-110		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: 4-Terphenyl-d14	69.4	52.1-116		%REC	1	12/2/2013 5:24:15 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104

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- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- P Sample pH greater than 2 for VOA and TOC only.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 8:45:24 PM	R15104
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
Surr: Dibromofluoromethane	101	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
Surr: Toluene-d8	102	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2600	0.010		µmhos/cm	1	11/27/2013 9:42:31 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.62	1.68	H	pH units	1	11/27/2013 9:42:31 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	140	20		mg/L CaCO3	1	11/27/2013 9:42:31 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:42:31 PM	R15156
Total Alkalinity (as CaCO3)	140	20		mg/L CaCO3	1	11/27/2013 9:42:31 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2010	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 6:40:07 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:40:07 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:40:07 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 6:40:07 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 6:40:07 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 6:40:07 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 6:40:07 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 6:40:07 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 6:40:07 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 6:40:07 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 6:40:07 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 6:40:07 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 6:40:07 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 6:40:07 PM	10572
Surr: Benzo(e)pyrene	60.0	24.5-139		%REC	1	12/3/2013 6:40:07 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	6.9	0.50	*	mg/L	5	11/26/2013 9:41:54 PM	R15112
Chloride	130	10		mg/L	20	11/26/2013 9:54:18 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 9:41:54 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	11/26/2013 9:41:54 PM	R15112
Sulfate	950	10	*	mg/L	20	11/26/2013 9:54:18 PM	R15112
Nitrate+Nitrite as N	9.6	1.0		mg/L	5	12/7/2013 4:32:54 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.63	0.020	*	mg/L	1	12/4/2013 7:39:11 PM	R15245
Barium	0.047	0.0020		mg/L	1	12/4/2013 7:39:11 PM	R15245
Boron	0.39	0.040		mg/L	1	12/4/2013 7:39:11 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:39:11 PM	R15245
Calcium	53	1.0		mg/L	1	12/4/2013 7:39:11 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:39:11 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:39:11 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:50:45 PM	R15267
Iron	0.39	0.020	*	mg/L	1	12/5/2013 1:50:45 PM	R15267
Magnesium	6.0	1.0		mg/L	1	12/4/2013 7:39:11 PM	R15245
Manganese	0.074	0.0020	*	mg/L	1	12/4/2013 7:39:11 PM	R15245

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
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Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.035	0.0080		mg/L	1	12/4/2013 7:39:11 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:50:45 PM	R15267
Potassium	25	1.0		mg/L	1	12/4/2013 7:39:11 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:39:11 PM	R15245
Sodium	490	5.0		mg/L	5	12/4/2013 7:47:57 PM	R15245
Zinc	0.033	0.010		mg/L	1	12/5/2013 1:50:45 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.020	0.0010	*	mg/L	1	12/10/2013 2:29:58 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:29:58 PM	R15392
Selenium	0.011	0.0010		mg/L	1	12/10/2013 2:29:58 PM	R15392
Uranium	0.0012	0.0010		mg/L	1	12/10/2013 2:29:58 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.00077	0.00020		mg/L	1	12/4/2013 6:01:21 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Surr: 2-Fluorophenol	37.0	22.7-98		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: Phenol-d5	28.9	23.4-74.9		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: 2,4,6-Tribromophenol	55.8	23.3-111		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: Nitrobenzene-d5	46.0	36.8-111		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: 2-Fluorobiphenyl	53.6	38.3-110		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: 4-Terphenyl-d14	57.1	52.1-116		%REC	1	12/2/2013 5:53:08 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 9:14:03 PM	R15104
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
Surr: Dibromofluoromethane	98.8	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
Surr: Toluene-d8	97.7	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2500	0.010		µmhos/cm	1	11/27/2013 9:52:37 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.56	1.68	H	pH units	1	11/27/2013 9:52:37 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	130	20		mg/L CaCO3	1	11/27/2013 9:52:37 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:52:37 PM	R15156
Total Alkalinity (as CaCO3)	130	20		mg/L CaCO3	1	11/27/2013 9:52:37 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolvec Solids	1880	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1311B14-008
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1311B14-008
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 11:08:58 PM	R15104
Surr: 1,2-Dichloroethane-d4	97.8	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104
Surr: Dibromofluoromethane	99.3	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104
Surr: Toluene-d8	94.5	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104

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

Qualifiers:

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

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

Date Received : December 04, 2013
Description :

ESC Sample # : L671947-01

Sample ID : 1311B14-001J MW-1

Site ID :

Project # :

Collected By :
Collection Date : 11/25/13 11:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	0.88	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-02

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-002J MW-2

Project # :

Collected By :
Collection Date : 11/25/13 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	1.3	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-03

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-003J MW-2B

Project # :

Collected By :
Collection Date : 11/25/13 09:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	1.4	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-04

Site ID :

Project # :

Date Received : December 04, 2013
Description :

Sample ID : 1311B14-004J MW-3

Collected By :
Collection Date : 11/24/13 17:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	3.7	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-05

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-005J MW-4

Project # :

Collected By :
Collection Date : 11/24/13 14:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	0.28	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-06

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-006J MW-5

Project # :

Collected By :
Collection Date : 11/24/13 12:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	1.2	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-07

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-007J MW-6

Project # :

Collected By :
Collection Date : 11/23/13 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	2.6	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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Hall Environmental Analysis Laboratory
Anne Thorne
4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L671947

December 10, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Phosphorus,Total	< .1	mg/l			WG696162	12/09/13 15:52

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Phosphorus,Total	mg/l	2.80	2.60	7.41	20	L671947-07	WG696162
Phosphorus,Total	mg/l	0.0	0.0	0.0	20	L671941-01	WG696162

Laboratory Control Sample

Analyte	Units	Known Va.	Result	% Rec	Limit	Batch
Phosphorus,Total	mg/l	1	0.944	94.4	90-110	WG696162

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Phosphorus,Total	mg/l	0.953	0.944	95.0	90-110	0.949	20	WG696162

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Phosphorus,Total	mg/l	2.69	0.280	2.5	96.0	90-110	L671947-05	WG696162

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Phosphorus,Total	mg/l	2.73	2.69	98.0	90-110	1.48	20	L671947-05	WG696162

Batch number /Run number / Sample number cross reference

WG696162: R2865363: L671947-01 02 03 04 05 06 07

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-001
Client Sample ID: 1311B14-001 MW-1

Report Date: 12/13/13
Collection Date: 11/25/13 11:45
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.8	mg/L		0.1		E200.7	12/02/13 21:16 / sf
Rubidium	0.2	mg/L		0.1		E200.8	12/13/13 10:33 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:33 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	238	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	45.2	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	73.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-002
Client Sample ID: 1311B14-002 MW2

Report Date: 12/13/13
Collection Date: 11/25/13 09:00
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.7	mg/L		0.1		E200.7	12/02/13 21:20 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:35 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:35 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	580	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	50.5	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	74.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-003
Client Sample ID: 1311B14-003 MW2B

Report Date: 12/13/13
Collection Date: 11/25/13 09:30
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.7	mg/L		0.1		E200.7	12/02/13 21:24 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:37 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:37 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	567	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	50.2	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	74.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-004
Client Sample ID: 1311B14-004 MW-3

Report Date: 12/13/13
Collection Date: 11/24/13 17:50
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.5	mg/L		0.1		E200.7	12/02/13 21:32 / sf
Rubidium	0.2	mg/L		0.1		E200.8	12/13/13 10:40 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:40 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	781	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	58.5	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	84.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-005
Client Sample ID: 1311B14-005 MW-4

Report Date: 12/13/13
Collection Date: 11/24/13 14:35
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	1.7	mg/L		0.1		E200.7	12/02/13 21:36 / sf
Rubidium	0.4	mg/L		0.1		E200.8	12/13/13 10:42 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:42 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	1090	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	63.4	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	86.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-006
Client Sample ID: 1311B14-006 MW-5

Report Date: 12/13/13
Collection Date: 11/24/13 12:15
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.4	mg/L		0.1		E200.7	12/02/13 21:40 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:45 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:45 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	197	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	53.3	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	88.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-007
Client Sample ID: 1311B14-007 MW-6

Report Date: 12/13/13
Collection Date: 11/23/13 12:00
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.8	mg/L		0.1		E200.7	12/02/13 21:44 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:47 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:47 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	507	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	68.1	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	106	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13111073

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92										Batch: R181361
Sample ID: C13111073-007BDUP	3	Sample Duplicate				Run: PACKARD 3100TR_131127A			11/27/13 15:50	
Radon 222		509	pCi/L					0.4	20	
Radon 222 precision (±)		68.2	pCi/L							
Radon 222 MDC		106	pCi/L							
Sample ID: MB-R181361	3	Method Blank				Run: PACKARD 3100TR_131127A			11/27/13 15:50	
Radon 222		6	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R181361		Laboratory Control Sample				Run: PACKARD 3100TR_131127A			11/27/13 15:50	
Radon 222		549	pCi/L		96	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13111073

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP2-C_131202B	
Sample ID: ICV		Initial Calibration Verification Standard							12/02/13 15:58	
Lithium		0.992	mg/L	0.10	99	95	105			
Sample ID: ICSA		Interference Check Sample A							12/02/13 16:26	
Lithium		0.00190	mg/L	0.10						
Sample ID: ICSAB		Interference Check Sample AB							12/02/13 16:30	
Lithium		0.00210	mg/L	0.10						
Method: E200.7									Batch: R181387	
Sample ID: MB-131202A		Method Blank				Run: ICP2-C_131202B			12/02/13 16:54	
Lithium		ND	mg/L	0.0002						
Sample ID: LFB-131202A		Laboratory Fortified Blank				Run: ICP2-C_131202B			12/02/13 16:58	
Lithium		0.949	mg/L	0.10	95	85	115			
Sample ID: C13111038-001BMS2		Sample Matrix Spike				Run: ICP2-C_131202B			12/02/13 21:04	
Lithium		1.86	mg/L	0.10	91	70	130			
Sample ID: C13111038-001BMSD2		Sample Matrix Spike Duplicate				Run: ICP2-C_131202B			12/02/13 21:08	
Lithium		1.89	mg/L	0.10	93	70	130	1.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 12/13/13
Work Order: C13111073

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B216493	
Sample ID: QCS	2	Initial Calibration Verification Standard							12/13/13 09:32	
Rubidium		0.0533	mg/L	0.010	107	90	110			
Tungsten		0.0534	mg/L	0.10	107	90	110			
Method: E200.8									Batch: B_R216493	
Sample ID: LFB	2	Laboratory Fortified Blank				Run: SUB-B216493			12/13/13 09:34	
Rubidium		0.0476	mg/L	0.010	95	85	115			
Tungsten		0.0487	mg/L	0.10	97	85	115			
Sample ID: LRB	2	Method Blank				Run: SUB-B216493			12/13/13 09:56	
Rubidium		0.03								
Tungsten		1.0								
Sample ID: B13120270-001CMS	2	Sample Matrix Spike				Run: SUB-B216493			12/13/13 10:52	
Rubidium		0.713	mg/L	0.010		70	130			A
Tungsten		0.113	mg/L	0.10	120	70	130			
Sample ID: B13120270-001CMSD	2	Sample Matrix Spike Duplicate				Run: SUB-B216493			12/13/13 10:54	
Rubidium		0.715	mg/L	0.010		70	130	0.3	20	A
Tungsten		0.113	mg/L	0.10	120	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

QC SUMMARY REPORT

WO#: **1311B14**

'all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **R15245** RunNo: **15245**

Prep Date: Analysis Date: **12/4/2013** SeqNo: **439555** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

lient ID: **LCSW** Batch ID: **R15245** RunNo: **15245**

Prep Date: Analysis Date: **12/4/2013** SeqNo: **439556** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.48	0.020	0.5000	0	96.9	85	115			
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Boron	0.51	0.040	0.5000	0	101	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.5	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.0	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.3	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.1	85	115			
Potassium	48	1.0	50.00	0	96.1	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Sodium	49	1.0	50.00	0	98.9	85	115			

Sample ID **1311B14-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **MW-1** Batch ID: **R15245** RunNo: **15245**

Prep Date: Analysis Date: **12/4/2013** SeqNo: **439580** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311B14-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439580** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0.03447	102	70	130			
Barium	0.53	0.0020	0.5000	0.06312	93.7	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.9	70	130			
Calcium	94	1.0	50.00	50.58	87.6	70	130			
Chromium	0.46	0.0060	0.5000	0	92.4	70	130			
Cobalt	0.46	0.0060	0.5000	0.001830	91.5	70	130			
Magnesium	51	1.0	50.00	2.055	98.8	70	130			
Manganese	0.67	0.0020	0.5000	0.2066	92.0	70	130			
Molybdenum	0.55	0.0080	0.5000	0.05781	98.2	70	130			
Nickel	0.44	0.010	0.5000	0	87.5	70	130			
Potassium	70	1.0	50.00	21.70	96.8	70	130			
Silver	0.096	0.0050	0.1000	0	96.2	70	130			

Sample ID **1311B14-001GMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439582** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0.03447	101	70	130	0.437	20	
Barium	0.53	0.0020	0.5000	0.06312	92.4	70	130	1.15	20	
Cadmium	0.49	0.0020	0.5000	0	97.9	70	130	0.00817	20	
Calcium	96	1.0	50.00	50.58	90.2	70	130	1.37	20	
Chromium	0.46	0.0060	0.5000	0	91.8	70	130	0.651	20	
Cobalt	0.46	0.0060	0.5000	0.001830	91.0	70	130	0.493	20	
Magnesium	53	1.0	50.00	2.055	103	70	130	3.58	20	
Manganese	0.66	0.0020	0.5000	0.2066	90.5	70	130	1.12	20	
Molybdenum	0.55	0.0080	0.5000	0.05781	98.4	70	130	0.186	20	
Nickel	0.43	0.010	0.5000	0	86.8	70	130	0.718	20	
Potassium	72	1.0	50.00	21.70	101	70	130	3.16	20	
Silver	0.095	0.0050	0.1000	0	95.0	70	130	1.28	20	

Sample ID **1311B14-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439584** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.1	0.20	2.500	0.7014	97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

'all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311B14-001GMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439585** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.2	0.20	2.500	0.7014	101	70	130	2.30	20	

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15267**	RunNo: **15267**
Prep Date:	Analysis Date: **12/5/2013**	SeqNo: **440169** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15267**	RunNo: **15267**
Prep Date:	Analysis Date: **12/5/2013**	SeqNo: **440170** Units: **mg/L**

ıalyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.48	0.0060	0.5000	0	95.4	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Nickel	0.46	0.010	0.5000	0	93.0	85	115			
Sodium	51	1.0	50.00	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	97.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.025	0.0010	0.02500	0	99.1	85	115			
Selenium	0.024	0.0010	0.02500	0	97.7	85	115			
Uranium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.024	0.0010	0.02500	0	96.8	85	115			
Selenium	0.025	0.0010	0.02500	0	99.3	85	115			
Uranium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443417** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443418** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	**MB-10596**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**10596**	RunNo:	**15236**					
Prep Date:	**12/2/2013**	Analysis Date:	**12/4/2013**	SeqNo:	**439897**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-10596**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**10596**	RunNo:	**15236**					
Prep Date:	**12/2/2013**	Analysis Date:	**12/4/2013**	SeqNo:	**439898**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**							
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436040**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	1.600	0	95.8	90	110			
Chloride	7.7	0.50	8.000	0	96.6	90	110			
Bromide	8.0	0.10	8.000	0	99.5	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	102	90	110			
Phosphorus, Orthophosphate (As P	7.5	0.50	8.000	0	94.3	90	110			
Sulfate	20	0.50	20.00	0	98.4	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R15112**	RunNo: **15112**							
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436042**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
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: **R15112**	RunNo: **15112**							
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436043**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.9	90	110			
Chloride	4.9	0.50	5.000	0	97.5	90	110			
Bromide	2.6	0.10	2.500	0	102	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	10	0.50	10.00	0	99.9	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**							
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436054**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.3	0.10	2.400	0	97.7	90	110			
Chloride	12	0.50	12.00	0	101	90	110			
Bromide	12	0.10	12.00	0	101	90	110			
Nitrogen, Nitrate (As N)	7.7	0.10	7.200	0	107	90	110			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436054** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	98.5	90	110			
Sulfate	30	0.50	30.00	0	102	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436066** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.97	0.10	1.000	0	97.2	90	110			
Chloride	4.6	0.50	5.000	0	92.8	90	110			
Bromide	4.8	0.10	5.000	0	96.7	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.3	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.9	90	110			
Sulfate	12	0.50	12.50	0	94.4	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
lient ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**
rep Date:	Analysis Date: **11/26/2013**	SeqNo: **436078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	1.600	0	96.3	90	110			
Chloride	7.8	0.50	8.000	0	96.9	90	110			
Bromide	8.0	0.10	8.000	0	99.6	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	103	90	110			
Phosphorus, Orthophosphate (As P	7.7	0.50	8.000	0	96.3	90	110			
Sulfate	20	0.50	20.00	0	98.6	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **436090** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.95	0.10	1.000	0	94.6	90	110			
Chloride	4.6	0.50	5.000	0	92.7	90	110			
Bromide	4.8	0.10	5.000	0	96.9	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.5	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **436102** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.3	0.10	2.400	0	97.2	90	110			
Chloride	12	0.50	12.00	0	100	90	110			
Bromide	12	0.10	12.00	0	100	90	110			
Nitrogen, Nitrate (As N)	7.7	0.10	7.200	0	107	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	98.8	90	110			
Sulfate	30	0.50	30.00	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15112**	RunNo: **15112**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **436114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.96	0.10	1.000	0	96.1	90	110			
Chloride	4.6	0.50	5.000	0	93.0	90	110			
Bromide	4.9	0.10	5.000	0	97.6	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.6	90	110			
Sulfate	12	0.50	12.50	0	95.0	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	98.0	90	110			
Sulfate	20	0.50	20.00	0	101	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437561** 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: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437562** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

'all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437562** 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	94.4	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	90	110			

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Sulfate	31	0.50	30.00	0	105	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437583** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
loride	4.7	0.50	5.000	0	94.5	90	110			
fate	12	0.50	12.50	0	96.7	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	97.7	90	110			
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437611** 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	94.4	90	110			
Sulfate	12	0.50	12.50	0	96.5	90	110			

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/28/2013** SeqNo: **437623** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437623** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Sulfate	31	0.50	30.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437635** 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	94.6	90	110			
Sulfate	12	0.50	12.50	0	97.0	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	98.0	90	110			
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437653** 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	94.8	90	110			
Sulfate	12	0.50	12.50	0	97.2	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441502** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	8.2	0.10	8.000	0	102	90	110			
Nitrate+Nitrite as N	8.1	0.20	8.000	0	102	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441514** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

'all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15322** RunNo: **15322**
Prep Date: Analysis Date: **12/6/2013** SeqNo: **441514** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	13	0.10	12.00	0	104	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15322** RunNo: **15322**
Prep Date: Analysis Date: **12/6/2013** SeqNo: **441526** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	5.0	0.10	5.000	0	99.7	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.5	90	110			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R15322** RunNo: **15322**
Prep Date: Analysis Date: **12/6/2013** SeqNo: **441530** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
ɔmide	ND	0.10								
ate+Nitrite as N	ND	0.20								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R15322** RunNo: **15322**
Prep Date: Analysis Date: **12/6/2013** SeqNo: **441531** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.3	0.10	2.500	0	93.8	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.8	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15322** RunNo: **15322**
Prep Date: Analysis Date: **12/6/2013** SeqNo: **441538** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	8.1	0.10	8.000	0	102	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15322** RunNo: **15322**
Prep Date: Analysis Date: **12/7/2013** SeqNo: **441550** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**
Prep Date:	Analysis Date: **12/7/2013**	SeqNo: **441550** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	12	0.10	12.00	0	104	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	104	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**
Prep Date:	Analysis Date: **12/7/2013**	SeqNo: **441562** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	5.0	0.10	5.000	0	99.7	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.6	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**
Prep Date:	Analysis Date: **12/7/2013**	SeqNo: **441568** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	8.2	0.10	8.000	0	102	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15376**	RunNo: **15376**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443035** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.7	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15376**	RunNo: **15376**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	7.7	0.50	8.000	0	96.5	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15376**	RunNo: **15376**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443059** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	99.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15376**	RunNo: **15376**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443069** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15376**	RunNo: **15376**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443070** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.5	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15376**	RunNo: **15376**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443071** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.5	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10569**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10569**	RunNo: **15129**
Prep Date: **11/27/2013**	Analysis Date: **11/27/2013**	SeqNo: **436536** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10569**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10569**	RunNo: **15129**
Prep Date: **11/27/2013**	Analysis Date: **11/27/2013**	SeqNo: **436537** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	91.4	80	120			

Sample ID **LCSD-10569**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10569**	RunNo: **15129**
Prep Date: **11/27/2013**	Analysis Date: **11/27/2013**	SeqNo: **436538** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	91.4	80	120	0	20	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435717** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
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- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435717** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.6	70	130			
Toluene	18	1.0	20.00	0	90.9	82.2	124			
Chlorobenzene	17	1.0	20.00	0	87.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	106	83.5	155			
Trichloroethene (TCE)	17	1.0	20.00	0	85.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.1	70	130			
Surr: Toluene-d8	9.8		10.00		98.2	70	130			

Sample ID **1311b14-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-1**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435726** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.9	67.9	137			
Toluene	19	1.0	20.00	0	95.4	77	127			
Chlorobenzene	17	1.0	20.00	0	87.2	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	99.0	66.5	131			
:hloroethene (TCE)	17	1.0	20.00	0	87.2	66.3	134			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.9		10.00		99.4	70	130			

Sample ID **1311b14-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-1**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435727** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.6	67.9	137	5.59	20	
Toluene	18	1.0	20.00	0	88.5	77	127	7.44	20	
Chlorobenzene	17	1.0	20.00	0	82.6	70	130	5.41	20	
1,1-Dichloroethene	19	1.0	20.00	0	94.9	66.5	131	4.19	20	
Trichloroethene (TCE)	17	1.0	20.00	0	83.1	66.3	134	4.90	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		99.7	70	130	0	0	
Surr: Toluene-d8	9.7		10.00		97.0	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10570**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437548** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10570**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437548** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		53.3	22.7	98			
Surr: Phenol-d5	87		200.0		43.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	140		200.0		71.3	23.3	111			
Surr: Nitrobenzene-d5	66		100.0		65.8	36.8	111			
Surr: 2-Fluorobiphenyl	61		100.0		61.2	38.3	110			
Surr: 4-Terphenyl-d14	76		100.0		75.9	52.1	116			

Qualifiers:

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- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcs-10570**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437549** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	72	10	100.0	0	72.0	48	101			
4-Chloro-3-methylphenol	150	10	200.0	0	76.0	47.9	109			
2-Chlorophenol	140	10	200.0	0	67.7	40	105			
1,4-Dichlorobenzene	63	10	100.0	0	62.8	40.8	94.3			
2,4-Dinitrotoluene	69	10	100.0	0	69.2	28.3	131			
N-Nitrosodi-n-propylamine	76	10	100.0	0	76.1	46.2	119			
4-Nitrophenol	70	10	200.0	0	35.0	10.5	67.9			
Pentachlorophenol	100	20	200.0	0	52.5	22.4	81.1			
Phenol	83	10	200.0	0	41.5	21.4	72.9			
Pyrene	74	10	100.0	0	74.4	46.9	109			
1,2,4-Trichlorobenzene	65	10	100.0	0	64.8	43.1	98.4			
Surr: 2-Fluorophenol	100		200.0		51.1	22.7	98			
Surr: Phenol-d5	80		200.0		40.1	23.4	74.9			
Surr: 2,4,6-Tribromophenol	150		200.0		75.6	23.3	111			
Surr: Nitrobenzene-d5	68		100.0		67.8	36.8	111			
Surr: 2-Fluorobiphenyl	69		100.0		68.9	38.3	110			
Surr: 4-Terphenyl-d14	83		100.0		82.7	52.1	116			

Sample ID **1311b14-005dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **MW-4**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	80	10	100.0	0	79.7	52.5	94.5			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	45	103			
2-Chlorophenol	140	10	200.0	0	67.7	32.3	101			
1,4-Dichlorobenzene	65	10	100.0	0	65.3	34.5	97.5			
2,4-Dinitrotoluene	75	10	100.0	0	75.3	20.1	123			
N-Nitrosodi-n-propylamine	70	10	100.0	0	70.1	26.9	131			
4-Nitrophenol	90	10	200.0	0	44.9	11.6	55.4			
Pentachlorophenol	130	20	200.0	0	65.9	17.6	88.9			
Phenol	79	10	200.0	0	39.4	18.4	66.5			
Pyrene	76	10	100.0	0	76.2	43.1	111			
1,2,4-Trichlorobenzene	71	10	100.0	0	70.8	38.8	95.6			
Surr: 2-Fluorophenol	110		200.0		53.8	22.7	98			
Surr: Phenol-d5	83		200.0		41.6	23.4	74.9			
Surr: 2,4,6-Tribromophenol	170		200.0		86.7	23.3	111			
Surr: Nitrobenzene-d5	76		100.0		75.9	36.8	111			
Surr: 2-Fluorobiphenyl	83		100.0		83.0	38.3	110			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

[all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311b14-005dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **MW-4**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	78		100.0		78.4	52.1	116			

Sample ID **1311b14-005dmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **MW-4**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437558** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	62.7	52.5	94.5	23.9	20	R
4-Chloro-3-methylphenol	130	10	200.0	0	66.1	45	103	6.14	20	
2-Chlorophenol	120	10	200.0	0	61.7	32.3	101	9.40	20	
1,4-Dichlorobenzene	57	10	100.0	0	56.6	34.5	97.5	14.3	20	
2,4-Dinitrotoluene	65	10	100.0	0	64.7	20.1	123	15.1	20	
N-Nitrosodi-n-propylamine	70	10	100.0	0	70.0	26.9	131	0.200	20	
4-Nitrophenol	72	10	200.0	0	35.9	11.6	55.4	22.3	20	R
Pentachlorophenol	130	20	200.0	0	64.0	17.6	88.9	2.80	20	
Phenol	75	10	200.0	0	37.4	18.4	66.5	5.34	20	
-ene	69	10	100.0	0	69.3	43.1	111	9.54	20	
,4-Trichlorobenzene	56	10	100.0	0	56.2	38.8	95.6	23.1	20	R
Surr: 2-Fluorophenol	89		200.0		44.3	22.7	98	0	0	
Surr: Phenol-d5	72		200.0		35.9	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.6	23.3	111	0	0	
Surr: Nitrobenzene-d5	65		100.0		65.1	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.4	38.3	110	0	0	
Surr: 4-Terphenyl-d14	67		100.0		67.5	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10572**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10572**	RunNo: **15191**
Prep Date: **11/27/2013**	Analysis Date: **12/3/2013**	SeqNo: **438044** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	29		20.00		144	24.5	139			S

Sample ID **LCS-10572**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10572**	RunNo: **15191**
Prep Date: **11/27/2013**	Analysis Date: **12/3/2013**	SeqNo: **438046** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	49	2.0	80.00	0	60.8	43.8	96.9			
1-Methylnaphthalene	44	2.0	80.20	0	55.1	41.3	87.3			
2-Methylnaphthalene	42	2.0	80.00	0	52.0	36.6	89.6			
Acenaphthylene	52	2.5	80.20	0	64.8	43.6	103			
Acenaphthene	44	5.0	80.00	0	54.6	42.4	87.6			
Fluorene	4.5	0.80	8.020	0	56.2	40.5	93.6			
Phenanthrene	2.6	0.60	4.020	0	63.7	43.9	111			
Anthracene	2.5	0.60	4.020	0	62.9	44.3	103			
Fluoranthene	4.7	0.30	8.020	0	58.4	43.5	109			
Pyrene	5.0	0.30	8.020	0	62.6	32.6	103			
Benz(a)anthracene	0.50	0.070	0.8020	0	62.3	43	114			
Chrysene	2.4	0.20	4.020	0	59.5	40.2	100			
Benzo(b)fluoranthene	0.64	0.10	1.002	0	63.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

'all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS-10572** SampType: **LCS** TestCode: **EPA Method 8310: PAHs**

Client ID: **LCSW** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438046** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.33	0.070	0.5020	0	65.7	34.5	118			
Dibenz(a,h)anthracene	0.66	0.12	1.002	0	65.9	38.3	107			
Benzo(g,h,i)perylene	0.64	0.12	1.000	0	64.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.5	0.25	2.004	0	73.4	42.4	113			
Surr: Benzo(e)pyrene	26		20.00		132	24.5	139			

Sample ID **1311B14-005CMS** SampType: **MS** TestCode: **EPA Method 8310: PAHs**

Client ID: **MW-4** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438531** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	40	2.0	80.00	0	50.3	70	130			S
1-Methylnaphthalene	33	2.0	80.20	0	41.0	70	130			S
2-Methylnaphthalene	29	2.0	80.00	0	36.1	70	130			S
Acenaphthylene	46	2.5	80.20	0	57.6	70	130			S
Acenaphthene	34	5.0	80.00	0	42.1	70	130			S
orene	3.4	0.80	8.020	0	42.3	70	130			S
enanthrene	2.2	0.60	4.020	0	54.2	70	130			S
Anthracene	2.1	0.60	4.020	0	52.5	70	130			S
Fluoranthene	5.8	0.30	8.020	0	71.8	70	130			
Pyrene	4.2	0.30	8.020	0	53.0	70	130			S
Benz(a)anthracene	0.43	0.070	0.8020	0	53.6	70	130			S
Chrysene	2.1	0.20	4.020	0.1100	50.5	70	130			S
Benzo(b)fluoranthene	0.61	0.10	1.002	0	60.9	70	130			S
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	70	130			S
Benzo(a)pyrene	0.26	0.070	0.5020	0	51.8	70	130			S
Dibenz(a,h)anthracene	0.57	0.12	1.002	0	56.9	70	130			S
Benzo(g,h,i)perylene	0.51	0.12	1.000	0	51.0	70	130			S
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	70	130			S
Surr: Benzo(e)pyrene	12		20.00		58.2	24.5	139			

Sample ID **1311B14-005CMSD** SampType: **MSD** TestCode: **EPA Method 8310: PAHs**

Client ID: **MW-4** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438532** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	40	2.0	80.00	0	50.2	70	130	0.199	20	S
1-Methylnaphthalene	34	2.0	80.20	0	41.9	70	130	2.32	20	S
2-Methylnaphthalene	31	2.0	80.00	0	38.4	70	130	6.14	20	S
Acenaphthylene	47	2.5	80.20	0	59.2	70	130	2.78	20	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311B14-005CMSD** SampType: **MSD** TestCode: **EPA Method 8310: PAHs**

Client ID: **MW-4** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438532** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	35	5.0	80.00	0	43.3	70	130	2.81	20	S
Fluorene	3.4	0.80	8.020	0	42.0	70	130	0.592	20	S
Phenanthrene	2.1	0.60	4.020	0	51.5	70	130	5.18	20	S
Anthracene	2.1	0.60	4.020	0	52.7	70	130	0.473	20	S
Fluoranthene	5.3	0.30	8.020	0	66.5	70	130	7.75	20	S
Pyrene	4.2	0.30	8.020	0	52.6	70	130	0.708	20	S
Benz(a)anthracene	0.43	0.070	0.8020	0	53.6	70	130	0	20	S
Chrysene	2.2	0.20	4.020	0.1100	50.7	70	130	0.466	20	S
Benzo(b)fluoranthene	0.60	0.10	1.002	0	59.9	70	130	1.65	20	S
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	70	130	0	20	S
Benzo(a)pyrene	0.26	0.070	0.5020	0	51.8	70	130	0	20	S
Dibenz(a,h)anthracene	0.57	0.12	1.002	0	56.9	70	130	0	20	S
Benzo(g,h,i)perylene	0.51	0.12	1.000	0	51.0	70	130	0	20	S
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	70	130	0	20	S
Surr: Benzo(e)pyrene	12		20.00		58.2	24.5	139	0		

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1311B14**

'all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	**mb-1**	SampType:	**mblk**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R15156**	RunNo:	**15156**					
Prep Date:		Analysis Date:	**11/27/2013**	SeqNo:	**436999**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	**lcs-1**	SampType:	**lcs**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R15156**	RunNo:	**15156**					
Prep Date:		Analysis Date:	**11/27/2013**	SeqNo:	**437000**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	100	90	110			

Sample ID	**mb-2**	SampType:	**mblk**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R15156**	RunNo:	**15156**					
Prep Date:		Analysis Date:	**11/27/2013**	SeqNo:	**437020**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	**lcs-2**	SampType:	**lcs**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R15156**	RunNo:	**15156**					
Prep Date:		Analysis Date:	**11/27/2013**	SeqNo:	**437021**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10567**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10567**	RunNo: **15143**
Prep Date: **11/27/2013**	Analysis Date: **11/29/2013**	SeqNo: **436797** 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-10567**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10567**	RunNo: **15143**
Prep Date: **11/27/2013**	Analysis Date: **11/29/2013**	SeqNo: **436798** Units: **mg/L**

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC Work Order Number: 1311B14 RcptNo: 1

Received by/date: MG 11/26/13

Logged By: Anne Thorne 11/26/2013 9:15:00 AM Anne Thorne

Completed By: Anne Thorne 11/26/2013 Anne Thorne

Reviewed By: IO 11/26/13

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☐	No ☑	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☐	No ☑	
9. Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ HNO3
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☑	No ☐	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 24 (<2 or >12 unless noted)
Adjusted? See below
Checked by:

Special Handling (if applicable)

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

Person Notified:	DAVID JANNEY
By Whom:	
Regarding:	SEE BELOW
Client Instructions:	

Date: 11/26/2013
Via: ☐ eMail ☑ Phone ☐ Fax ☐ In Person

17. Additional remarks: added 1mL HNO3 to Hg bottles for acceptable pH / A 11/26/13 @1245
MW-4, MW-5 TPH BOTTLES ARRIVED BROKEN, NOT ENOUGH VOLUME FOR RADIUM 226/228-/at 11/26/13

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
4	3.8	Good	Yes			

Chain-of-Custody Record

Client: AMEC Environment & Infrastructure, Inc.

Mailing Address: 8519 Jefferson St NE ABQ, NM 87113

Phone #: (505) 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL AT 12/06/13

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Lightning Dock Geothermal Water Quality Monitoring

Project #: 11-517-00102

Project Manager: David Janney

Sampler: Eric Koenig

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.8

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. 1311814	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals Plus Br Li, Rb, W	UA (6010B/6020)	Radium 226/228	Air Bubbles (Y or N)
11/25/13	11:45	Water	MW-1	13	HCl, HNO3, H2SO4	-001				X		X		X		X	X	X	X	X	
11/25/13	9:00		MW-2			-002				X		X		X		X	X	X	X	X	
11/25/13	9:30		MW-2B			-003				X		X		X		X	X	X	X	X	
11/24/13	17:50		MW-3			-004				X		X		X		X	X	X	X	X	
11/24/13	14:35		MW-4			-005				X		X		X		X	X	X	X	X	
11/24/13	12:15		MW-5			-006				X		X		X		X	X	X	X	X	
11/23/13	12:00		MW-6			-007				X		X		X		X	X	X	X	X	
			Trip Blank AT 11/26/13			-008				X		X		X		X	X	X	X	X	

Date: 11/25/13 Time: 15:00 Relinquished by: Eric D. Koenig

Received by: _____ Date Time: 11/26/13 0915

Date: _____ Time: _____ Relinquished by: _____

Received by: _____ Date Time: _____

Remarks: Invoice Cyrq Energy Attn: See attached for full analyte list. MW-4 & MW-5 4L8 bottles were broken upon Receipt /AT 11/26/13

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

January 22, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock CYRQ ENERGY OrderNo.: 1312659

Dear David Janney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/16/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312659**
Date Reported: **1/22/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/16/2013 9:45:56 PM	10822
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1221	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1232	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1242	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1248	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1254	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1260	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Surr: Decachlorobiphenyl	78.8	17-123		%REC	1	12/18/2013 4:15:08 AM	10796
Surr: Tetrachloro-m-xylene	55.2	22.6-113		%REC	1	12/18/2013 4:15:08 AM	10796
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/17/2013 10:00:05 PM	10797
1-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:00:05 PM	10797
2-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:00:05 PM	10797
Acenaphthylene	ND	2.5		µg/L	1	12/17/2013 10:00:05 PM	10797
Acenaphthene	ND	5.0		µg/L	1	12/17/2013 10:00:05 PM	10797
Fluorene	ND	0.80		µg/L	1	12/17/2013 10:00:05 PM	10797
Phenanthrene	ND	0.60		µg/L	1	12/17/2013 10:00:05 PM	10797
Anthracene	ND	0.60		µg/L	1	12/17/2013 10:00:05 PM	10797
Fluoranthene	ND	0.30		µg/L	1	12/17/2013 10:00:05 PM	10797
Pyrene	ND	0.30		µg/L	1	12/17/2013 10:00:05 PM	10797
Benz(a)anthracene	ND	0.070		µg/L	1	12/17/2013 10:00:05 PM	10797
Chrysene	ND	0.20		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(a)pyrene	ND	0.070		µg/L	1	12/17/2013 10:00:05 PM	10797
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/17/2013 10:00:05 PM	10797
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/17/2013 10:00:05 PM	10797
Surr: Benzo(e)pyrene	46.0	24.5-139		%REC	1	12/17/2013 10:00:05 PM	10797
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	9.3	2.0	*	mg/L	20	12/16/2013 9:57:25 PM	R15551
Chloride	120	10		mg/L	20	12/16/2013 9:57:25 PM	R15551
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/16/2013 9:45:00 PM	R15551
Sulfate	540	10	*	mg/L	20	12/16/2013 9:57:25 PM	R15551
Nitrate+Nitrite as N	15	1.0	*	mg/L	5	12/17/2013 4:47:07 AM	R15551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	25	1.0	*	mg/L	50	12/23/2013 5:48:42 PM	R15707
Barium	0.14	0.0020		mg/L	1	12/19/2013 5:37:06 PM	R15612
Boron	0.45	0.040		mg/L	1	12/19/2013 5:37:06 PM	R15612
Cadmium	ND	0.0020		mg/L	1	12/19/2013 5:37:06 PM	R15612
Calcium	53	1.0		mg/L	1	12/19/2013 5:37:06 PM	R15612
Chromium	ND	0.0060		mg/L	1	12/19/2013 5:37:06 PM	R15612
Cobalt	ND	0.0060		mg/L	1	12/19/2013 5:37:06 PM	R15612
Copper	ND	0.0060		mg/L	1	12/19/2013 5:37:06 PM	R15612
Iron	8.5	1.0	*	mg/L	50	12/23/2013 5:48:42 PM	R15707
Magnesium	4.6	1.0		mg/L	1	12/19/2013 5:37:06 PM	R15612
Manganese	0.27	0.0020	*	mg/L	1	12/19/2013 5:37:06 PM	R15612
Molybdenum	0.029	0.0080		mg/L	1	12/19/2013 5:37:06 PM	R15612
Nickel	ND	0.010		mg/L	1	12/19/2013 5:37:06 PM	R15612
Potassium	21	1.0		mg/L	1	12/19/2013 5:37:06 PM	R15612
Silver	ND	0.0050		mg/L	1	12/19/2013 5:37:06 PM	R15612
Sodium	320	5.0		mg/L	5	12/19/2013 5:38:52 PM	R15612
Zinc	0.015	0.010		mg/L	1	12/19/2013 5:37:06 PM	R15612
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.011	0.0010	*	mg/L	1	1/6/2014 5:07:15 PM	R15909
Lead	0.0044	0.0010		mg/L	1	1/6/2014 5:07:15 PM	R15909
Uranium	0.0037	0.0010		mg/L	1	1/7/2014 6:04:39 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **IDC**	
Mercury	0.0016	0.00020		mg/L	1	1/3/2014 3:50:20 PM	11064
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Acenaphthylene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Aniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Anthracene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Azobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benz(a)anthracene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(a)pyrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzoic acid	ND	40		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzyl alcohol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Carbazole	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Chloroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Chloronaphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Chlorophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Chrysene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Dibenzofuran	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Diethyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Dimethyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dichlorophenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Fluoranthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Fluorene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachlorobutadiene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachloroethane	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Isophorone	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Methylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
3+4-Methylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
N-Nitrosodimethylamine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Naphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Nitroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
3-Nitroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Nitroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Nitrobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Nitrophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Nitrophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Pentachlorophenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
Phenanthrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Phenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Pyrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Pyridine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Surr: 2-Fluorophenol	47.0	22.7-98		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: Phenol-d5	35.9	23.4-74.9		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: 2,4,6-Tribromophenol	74.6	23.3-111		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: Nitrobenzene-d5	69.6	36.8-111		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: 2-Fluorobiphenyl	70.7	38.3-110		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: 4-Terphenyl-d14	73.1	52.1-116		%REC	1	12/18/2013 9:34:48 AM	10800
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Toluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Ethylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,4-Trimethylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Naphthalene	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1-Methylnaphthalene	ND	8.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Methylnaphthalene	ND	8.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Acetone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Bromobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Bromodichloromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529

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- E Value above quantitation range
- J Analyte detected below quantitation limits
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- R RPD outside accepted recovery limits
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- ND Not Dctected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY
Lab ID: 1312659-001 **Matrix:** AQUEOUS

Client Sample ID: MW-1B
Collection Date: 12/11/2013 10:45:00 AM
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Bromoform	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Bromomethane	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Butanone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Carbon disulfide	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Carbon Tetrachloride	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chloroethane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chloroform	33	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chloromethane	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Chlorotoluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
4-Chlorotoluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
cis-1,2-DCE	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Dibromochloromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Dibromomethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,3-Dichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,4-Dichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Dichlorodifluoromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1-Dichloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1-Dichloroethene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dichloropropane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,3-Dichloropropane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2,2-Dichloropropane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1-Dichloropropene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Hexachlorobutadiene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Hexanone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Isopropylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
4-Isopropyltoluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
4-Methyl-2-pentanone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Methylene Chloride	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
n-Butylbenzene	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
n-Propylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
sec-Butylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Styrene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
tert-Butylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
trans-1,2-DCE	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,1-Trichloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,2-Trichloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Trichloroethene (TCE)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Trichlorofluoromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,3-Trichloropropane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Vinyl chloride	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Xylenes, Total	ND	3.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Surr: 1,2-Dichloroethane-d4	86.9	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
Surr: 4-Bromofluorobenzene	91.5	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
Surr: Dibromofluoromethane	93.1	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
Surr: Toluene-d8	92.6	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	1.3	1.0		mg/L	1	12/17/2013	10820
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10891
SM4500-H+B: PH						Analyst: **SRM**	
pH	7.66	1.68	H	pH units	1	12/16/2013 5:58:17 PM	R15528
SM2320B: ALKALINITY						Analyst: **SRM**	
Bicarbonate (As CaCO3)	86	20		mg/L CaCO3	1	12/16/2013 5:58:17 PM	R15528
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/16/2013 5:58:17 PM	R15528
Total Alkalinity (as CaCO3)	86	20		mg/L CaCO3	1	12/16/2013 5:58:17 PM	R15528
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1520	200	*	mg/L	1	12/19/2013 11:19:00 AM	10843

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218049
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312659
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218049-001	**Sampling Date**	12/11/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312659-001K / MW-1B	**Sampling Time**	10:45 AM		
Matrix	Water				
Comments	Metals samples received unfiltered and preserved with HNO3.				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Lithium	0.533	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Rubidium	0.189	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Tungsten	0.0386	mg/L	0.01	1/21/2014	ETL	EPA 200.8	

Sample Number	131218049-002	**Sampling Date**	12/11/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312659-001L / MW-1B	**Sampling Time**	10:45 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/18/2013	CRW	EPA 335.4	

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218049
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312659
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218049-003	**Sampling Date**	12/11/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312659-001M / MW-1B	**Sampling Time**	10:45 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	3.25	mg/L	0.1	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120620-001
Client Sample ID: 1312659-001O MW-1B

Report Date: 12/23/13
Collection Date: 12/11/13 10:45
DateReceived: 12/18/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Radon 222	676	pCi/L				D5072-92	12/18/13 18:01 / dpb
Radon 222 precision (±)	122	pCi/L				D5072-92	12/18/13 18:01 / dpb
Radon 222 MDC	195	pCi/L				D5072-92	12/18/13 18:01 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/23/13
Project: Not Indicated
Work Order: C13120620

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92									Batch: R181914	
Sample ID: C13120621-001ADUP	3	Sample Duplicate				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		1.6	pCi/L					210	20	UR
Radon 222 precision (±)		75.1	pCi/L							
Radon 222 MDC		130	pCi/L							
- The Sample and the Duplicate are both below the MDC. The RPD is acceptable.										
Sample ID: MB-R181914	3	Method Blank				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		7	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R181914		Laboratory Control Sample				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		552	pCi/L		96	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312659
Pace Project No.: 30109787

Sample: 1312659-001 MW-1B **Lab ID: 30109787001** Collected: 12/11/13 10:45 Received: 12/17/13 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**2.00 ± 0.722 (0.566)**	pCi/L	12/27/13 12:46	13982-63-3	
Radium-228	EPA 904.0	**0.711 ± 0.402 (0.727)**	pCi/L	12/31/13 09:22	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312659
Pace Project No.: 30109787

QC Batch: RADC/18095
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30109787001

METHOD BLANK: 671140
Matrix: Water
Associated Lab Samples: 30109787001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.291 ± 0.271 (0.728)	pCi/L	12/27/13 11:20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312659
Pace Project No.: 30109787

QC Batch: RADC/18094
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30109787001

METHOD BLANK: 671139
Matrix: Water
Associated Lab Samples: 30109787001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.177 ± 0.225 (0.479)	pCi/L	12/31/13 09:21	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

WO#: **1312659**

'all Environmental Analysis Laboratory, Inc.

22-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449740** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

ample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
,lient ID: **LCSW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449741** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	49	1.0	50.00	0	97.2	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.4	85	115			
Copper	0.48	0.0060	0.5000	0	96.7	85	115			
Magnesium	49	1.0	50.00	0	98.0	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Potassium	48	1.0	50.00	0	95.1	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	48	1.0	50.00	0	95.2	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453037** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Iron	ND	0.020								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	107	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.027	0.0010	0.02500	0	106	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.4	85	115			
Lead	0.026	0.0010	0.02500	0	105	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
ʒenic	ND	0.0010								
ıd	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.027	0.0010	0.02500	0	109	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID	**MB-11064**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**11064**	RunNo:	**15897**					
Prep Date:	**1/3/2014**	Analysis Date:	**1/3/2014**	SeqNo:	**458393**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-11064**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**11064**	RunNo:	**15897**					
Prep Date:	**1/3/2014**	Analysis Date:	**1/3/2014**	SeqNo:	**458394**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.9	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447258** 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								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.7	90	110			
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.4	90	110			
Sulfate	9.5	0.50	10.00	0	95.4	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.2	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447268** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.97	0.10	1.000	0	97.2	90	110			
Chloride	4.6	0.50	5.000	0	92.6	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.4	90	110			
Sulfate	12	0.50	12.50	0	93.9	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447280** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	97.6	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.2	90	110			
Sulfate	20	0.50	20.00	0	98.5	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312659**

'all Environmental Analysis Laboratory, Inc.

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447292** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	2.400	0	98.4	90	110			
Chloride	12	0.50	12.00	0	101	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	100	90	110			
Sulfate	31	0.50	30.00	0	102	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/17/2013**	SeqNo: **447304** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.94	0.10	1.000	0	93.6	90	110			
Chloride	4.6	0.50	5.000	0	92.5	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.4	90	110			

ample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/17/2013**	SeqNo: **447316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	96.9	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.3	90	110			
Sulfate	20	0.50	20.00	0	98.1	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/17/2013**	SeqNo: **447327** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.95	0.10	1.000	0	95.2	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10820**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447701** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10820**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.0	1.0	5.000	0	99.8	80	120			

Sample ID **LCSD-10820**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.7	1.0	5.000	0	94.8	80	120	5.14	20	

Qualifiers:

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- E Value above quantitation range
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- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10822**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447079** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10822**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447080** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	113	70	130			

Sample ID **LCSD-10822**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447081** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	108	70	130	4.52	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10796**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447133** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.2	17	123			
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	22.6	113			

Sample ID **LCS-10796**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447135** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
Aroclor 1260	3.8	1.0	5.000	0	75.7	35.7	137			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		64.4	22.6	113			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312659**

'all Environmental Analysis Laboratory, Inc.

22-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
utanone	ND	10								
rbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.4	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.9	70	130			

Sample ID **100ng lcs200ng aca**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	20	1.0	20.00	0	102	82.2	124			
Chlorobenzene	20	1.0	20.00	0	99.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312659**

'all Environmental Analysis Laboratory, Inc.

22-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY

Sample ID **100ng lcs200ng aca** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R15529** RunNo: **15529**
Prep Date: Analysis Date: **12/16/2013** SeqNo: **446646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	9.0		10.00		90.3	70	130			
Surr: Toluene-d8	9.4		10.00		94.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	90		200.0		45.2	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	64		100.0		64.0	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		68.2	38.3	110			
Surr: 4-Terphenyl-d14	75		100.0		74.7	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **lcs-10800**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446855** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	89.4	48	101			
4-Chloro-3-methylphenol	190	10	200.0	0	94.8	47.9	109			
2-Chlorophenol	180	10	200.0	0	92.5	40	105			
1,4-Dichlorobenzene	96	10	100.0	0	96.4	40.8	94.3			S
2,4-Dinitrotoluene	87	10	100.0	0	86.8	28.3	131			
N-Nitrosodi-n-propylamine	100	10	100.0	0	101	46.2	119			
4-Nitrophenol	88	10	200.0	0	43.8	10.5	67.9			
Pentachlorophenol	130	20	200.0	0	65.2	22.4	81.1			
Phenol	110	10	200.0	0	54.2	21.4	72.9			
Pyrene	83	10	100.0	0	83.0	46.9	109			
1,2,4-Trichlorobenzene	93	10	100.0	0	93.3	43.1	98.4			
Surr: 2-Fluorophenol	120		200.0		59.7	22.7	98			
Surr: Phenol-d5	110		200.0		53.4	23.4	74.9			
Surr: 2,4,6-Tribromophenol	180		200.0		91.9	23.3	111			
Surr: Nitrobenzene-d5	81		100.0		81.5	36.8	111			
Surr: 2-Fluorobiphenyl	85		100.0		84.8	38.3	110			
Surr: 4-Terphenyl-d14	88		100.0		87.8	52.1	116			

Sample ID **lcsd-10800**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446856** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	90	10	100.0	0	89.9	48	101	0.558	25	
4-Chloro-3-methylphenol	180	10	200.0	0	92.1	47.9	109	2.84	32.7	
2-Chlorophenol	170	10	200.0	0	83.9	40	105	9.78	20	
1,4-Dichlorobenzene	83	10	100.0	0	82.6	40.8	94.3	15.4	20	
2,4-Dinitrotoluene	81	10	100.0	0	80.8	28.3	131	7.11	29.9	
N-Nitrosodi-n-propylamine	90	10	100.0	0	90.4	46.2	119	10.9	23.1	
4-Nitrophenol	78	10	200.0	0	39.0	10.5	67.9	11.6	40.5	
Pentachlorophenol	110	20	200.0	0	54.5	22.4	81.1	17.8	37.3	
Phenol	92	10	200.0	0	46.2	21.4	72.9	15.9	20	
Pyrene	83	10	100.0	0	83.1	46.9	109	0.193	26.5	
1,2,4-Trichlorobenzene	84	10	100.0	0	83.8	43.1	98.4	10.7	27.2	
Surr: 2-Fluorophenol	110		200.0		55.0	22.7	98	0	0	
Surr: Phenol-d5	93		200.0		46.5	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		79.0	23.3	111	0	0	
Surr: Nitrobenzene-d5	81		100.0		80.8	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	83		100.0		82.9	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID	**lcsd-10800**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **10800**		RunNo: **15530**					
Prep Date:	**12/16/2013**	Analysis Date: **12/16/2013**		SeqNo: **446856**		Units: **µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	83		100.0		82.9	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10797**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447054** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	21		20.00		104	24.5	139			

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	41	2.0	80.00	0	51.6	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	44.8	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	42.0	36.6	89.6			
Acenaphthylene	46	2.5	80.20	0	57.7	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.1	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.2	0.60	4.020	0	53.7	43.9	111			
Anthracene	2.2	0.60	4.020	0	56.0	44.3	103			
Fluoranthene	4.6	0.30	8.020	0	57.5	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.7	32.6	103			
Benz(a)anthracene	0.46	0.070	0.8020	0	57.4	43	114			
Chrysene	2.2	0.20	4.020	0	54.0	40.2	100			
Benzo(b)fluoranthene	0.57	0.10	1.002	0	56.9	44.4	118			
Benzo(k)fluoranthene	0.29	0.070	0.5000	0	58.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.28	0.070	0.5020	0	55.8	34.5	118			
Dibenz(a,h)anthracene	0.59	0.12	1.002	0	58.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	64.4	42.4	113			
Surr: Benzo(e)pyrene	15		20.00		74.8	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10891**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449210** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10891**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449211** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	103	73.7	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-1**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446604**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446605**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.4	90	110			

Sample ID **mb-2**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446624**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-2**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
lient ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446625**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10843**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10843**	RunNo: **15605**
Prep Date: **12/17/2013**	Analysis Date: **12/19/2013**	SeqNo: **449401** 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-10843**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10843**	RunNo: **15605**
Prep Date: **12/17/2013**	Analysis Date: **12/19/2013**	SeqNo: **449402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1050	20.0	1000	0	105	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312659 | RcptNo: 1

Received by/date: KS 12/16/13

Logged By: Anne Thorne 12/16/2013 9:05:00 AM Anne Thorne

Completed By: Anne Thorne 12/16/2013 Anne Thorne

Reviewed By: AT 12/16/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 8 (<2 or >12 unless noted)

Adjusted? _____

Checked by: AT 12/16/13

Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client:	AMEC E&I, INC.
Mailing Address:	8519 Jefferson ALBUQUERQUE, NM 87113
Phone #:	505-821-1801
email or Fax#:	David.Janney@AMEC.com
QA/QC Package:	☒ Standard ☐ Level 4 (Full Validation)
Accreditation	☐ NELAP ☐ Other
☐ EDD (Type)	

Turn-Around Time:	☐ Standard ☐ Rush
Project Name:	(Lightning Dock) CYRQ ENERGY
Project #:	11-517-00102
Project Manager:	DAVID Janney
Sampler:	
On Ice:	☑ Yes ☐ No
Sample Temperature:	2.9

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attached List				Air Bubbles (Y or N)
12-11-13	10:45	Aqueous	MW-1B			1312659-001												X	X			

Date: 12-12-13	Time: 17:00	Relinquished by: Jeff Cotter	Received by:	Date	Time
Date: 12-16-13	Time: 0905	Relinquished by: Jeff Cotter	Received by:	Date: 12/16/13	Time: 0905

Remarks:

SEE ATTACHED LIST for Lightning Dock GeoThermal Project. Per DJ invoice CYRQ @ 12/16/13

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.

12/02/13 /AT
We this list

CYRQ ENERGY WQCC BOTTLES FOR 1 SAMPLE

TEST	BOTTLE TYPE/PRESERVATIVE
8260	3 x 40 ml HCl Voa's
EDB-504.1	2 x 40 ml voa's Na2S203
1082-PCB	1 x ltr unpreserved amber
8310-PAH	1 x ltr unpreserved amber
8270-SVOC	1 x ltr unpreserved amber
Phenols	1 x ltr H2S04 amber
Anions, TDS, pH, + WQCC Anions SO4, Cl, PSO4, Carbonate, Bicarbonate, Total Alk TDS, pH; + NO2-NO3	1 x 500 unpreserved plastic 1 x 125 H2S04 plastic
Mercury AT 12/16/13	1 x 500 HN03 plastic
Dissolved Metals/Cations Al, As, Ag, B, Ba, Br, Cd, Cu, Co, Fe, F, / Ca, Na, K, P Hg, Li, Mn, Mg, Mo, Ni, Pb, Se, Ru, W, Zn, U	2 x 125 HN03 plastic
418.1 TPH	1 x 500 HCl amber
Total Phosphorus	Ask Hall
Radon	"
CYN	"
Radium 226/228	"

Note Li, Ru, W on COC

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

January 08, 2014

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal Groundwater Quality Mon OrderNo.: 1312725

Dear David Janney:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/16/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312725**
Date Reported: **1/8/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 4:30:00 PM
Lab ID: 1312725-001
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 5:23:43 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 11:00:00 AM
Lab ID: 1312725-002
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 5:37:27 PM	10868
TOTAL PHENOLICS BY SW-846 9067							Analyst: **SCC**
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 11:30:00 AM
Lab ID: 1312725-003
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 5:51:14 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 10:30:00 PM
Lab ID: 1312725-004
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:05:07 PM	10868
TOTAL PHENOLICS BY SW-846 9067							Analyst: **SCC**
Phenolics, Total Recoverable	10	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/9/2013 6:00:00 PM
Lab ID: 1312725-005
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:18:58 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/9/2013 12:00:00 PM
Lab ID: 1312725-006
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:32:39 PM	10868
TOTAL PHENOLICS BY SW-846 9067							Analyst: **SCC**
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/9/2013 3:00:00 PM
Lab ID: 1312725-007
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:46:28 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 131220064
Project Name: 1312725

Analytical Results Report

Sample Number 131220064-001 **Sampling Date** 12/10/2013 **Date/Time Received** 12/20/2013 2:09 PM
Client Sample ID 1312725-001C / MW-1 **Sampling Time** 4:30 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number 131220064-002 **Sampling Date** 12/10/2013 **Date/Time Received** 12/20/2013 2:09 PM
Client Sample ID 1312725-002C / MW-2 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number 131220064-003 **Sampling Date** 12/10/2013 **Date/Time Received** 12/20/2013 2:09 PM
Client Sample ID 1312725-003C / MW-2B **Sampling Time** 11:30 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number 131220064-004 **Sampling Date** 12/10/2013 **Date/Time Received** 12/20/2013 2:09 PM
Client Sample ID 1312725-004C / MW-3 **Sampling Time** 10:30 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number 131220064-005 **Sampling Date** 12/9/2013 **Date/Time Received** 12/20/2013 2:09 PM
Client Sample ID 1312725-005C / MW-4 **Sampling Time** 6:00 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131220064
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312725
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131220064-006	**Sampling Date**	12/9/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-006C / MW-5	**Sampling Time**	12:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number	131220064-007	**Sampling Date**	12/9/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-007C / MW-6	**Sampling Time**	3:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312725
Pace Project No.: 30110107

Sample: 1312725-001 MW-1 **Lab ID: 30110107001** Collected: 12/10/13 16:30 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.285 ± 0.350 (0.571)**	pCi/L	01/06/14 13:54	13982-63-3	
Radium-228	EPA 904.0	**0.888 ± 0.456 (0.799)**	pCi/L	01/07/14 14:05	15262-20-1	

Sample: 1312725-002 MW-2 **Lab ID: 30110107002** Collected: 12/10/13 11:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.266 ± 0.377 (0.638)**	pCi/L	01/06/14 14:09	13982-63-3	
Radium-228	EPA 904.0	**0.0585 ± 0.308 (0.702)**	pCi/L	01/07/14 15:50	15262-20-1	

Sample: 1312725-003 MW-2B **Lab ID: 30110107003** Collected: 12/10/13 11:30 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.183 ± 0.312 (0.550)**	pCi/L	01/06/14 13:54	13982-63-3	
Radium-228	EPA 904.0	**0.468 ± 0.385 (0.767)**	pCi/L	01/07/14 15:02	15262-20-1	

Sample: 1312725-004 MW-3 **Lab ID: 30110107004** Collected: 12/10/13 10:30 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.102 ± 0.375 (0.720)**	pCi/L	01/06/14 14:24	13982-63-3	
Radium-228	EPA 904.0	**0.156 ± 0.270 (0.590)**	pCi/L	01/07/14 15:02	15262-20-1	

Sample: 1312725-005 MW-4 **Lab ID: 30110107005** Collected: 12/09/13 18:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**1.32 ± 0.615 (0.664)**	pCi/L	01/06/14 14:09	13982-63-3	
Radium-228	EPA 904.0	**0.542 ± 0.396 (0.772)**	pCi/L	01/07/14 15:02	15262-20-1	

Sample: 1312725-006 MW-5 **Lab ID: 30110107006** Collected: 12/09/13 12:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.305 ± 0.401 (0.667)**	pCi/L	01/06/14 13:54	13982-63-3	
Radium-228	EPA 904.0	**0.333 ± 0.452 (0.966)**	pCi/L	01/07/14 17:06	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312725
Pace Project No.: 30110107

Sample: 1312725-007 MW-6 **Lab ID: 30110107007** Collected: 12/09/13 15:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.140 ± 0.305 (0.562)**	pCi/L	01/06/14 14:09	13982-63-3	
Radium-228	EPA 904.0	**2.53 ± 0.949 (1.39)**	pCi/L	01/07/14 15:50	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312725
Pace Project No.: 30110107

QC Batch: RADC/18162 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

METHOD BLANK: 673486 Matrix: Water
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.195 ± 0.271 (0.686)	pCi/L	01/06/14 13:51	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312725
Pace Project No.: 30110107

QC Batch: RADC/18180 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

METHOD BLANK: 674062 Matrix: Water
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	-0.113 ± 0.319 (0.769)	pCi/L	01/07/14 12:48	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

WO#: **1312725**

'all Environmental Analysis Laboratory, Inc.

08-Jan-14

Client: AMEC

Project: Lightning Dock Geothermal Groundwater Qualit

Sample ID **MB-10868**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10868**	RunNo: **15596**
Prep Date: **12/18/2013**	Analysis Date: **12/18/2013**	SeqNo: **449514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10868**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10868**	RunNo: **15596**
Prep Date: **12/18/2013**	Analysis Date: **12/18/2013**	SeqNo: **449515** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312725**

08-Jan-14

Client: AMEC

Project: Lightning Dock Geothermal Groundwater Qualit

Sample ID **MB-10893**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10893**	RunNo: **15599**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449235** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10893**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10893**	RunNo: **15599**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449236** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	116	73.7	135			

Sample ID **LCSD-10893**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSS02**	Batch ID: **10893**	RunNo: **15599**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449248** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	110	73.7	135	5.63	21.4	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312725 | RcptNo: 1

Received by/date: KS 12/16/13

Logged By: **Anne Thorne** 12/16/2013 9:05:00 AM Anne Thorne

Completed By: **Anne Thorne** 12/17/2013 Anne Thorne

Reviewed By: MG 12/18/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 2, 7 (<2 or >12 unless noted)

Adjusted? NO

Checked by: KMS 12/18/13

Special Handling (if applicable)

16. 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: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			

Chain-of-Custody Record

Client: AMEC

Mailing Address: 6519 Jefferson St ABQ, NM 87113

Phone #: 505 821-1801

email or Fax#: david.jannney@amec.com

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

Accreditation: ☐ NELAP ☐ Other ____

☐ EDD (Type) ____

Turn-Around Time: ☒ Standard ☐ Rush ____

Project Name: Lightning Dock Geothermal Groundwater Quality Mon.

Project #: 11-517-00102.06

Project Manager: David Janney

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.9

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. 1312725	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA) 12/11/13	Ra 226 / 228	Cyanide	Phenol		Air Bubbles (Y or N)
12/10/13	16:30	water	MW-1	5	HNO3 HCl NaOH H2SO4	-001					X							X	X	X		
	11:00		MW-2	5		-002					X							X	X	X		
	11:30		MW-2B	5		-003					X							X	X	X		
	22:30		MW-3	5		-004					X							X	X	X		
12/9/13	18:00		MW-4	5		-005					X							X	X	X		
12/9/13	12:00		MW-5	5		-006					X							X	X	X		
12/9/13	15:00		MW-6	5		-007					X							X	X	X		

Date	Time	Relinquished by:	Received by:	Date	Time
12/12/13	16:00	Erin D. Koenig			
12/16/13	0905			12/16/13	0905

Remarks: Per DJ invoice CKRD/A 12/16/13

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.

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 **of**

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-1A	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	pH meter (temperature): X YSI 556	EDK	11:45	11/25/2013
Casing Diameter (in.)	___ Peristaltic Pump ___ Dedicated Pump	___ Orion ___ Other:	**Meter Calibration**		
1.913	___ 2" Grundfos ___ Waterra Pump	Serial No.:	Time:		
Total Well Depth (ft.)	___ Geotech Pump X Other: Bailer	Conductivity Meter: X YSI 556	pH 4 = ___ at ___ °C Lot # Exp.		
85.00		___ Orion ___ Other:	pH 7 = ___ at ___ °C Lot # Exp		
Static Water Level (ft.)	Serial Number:	Serial No.:			
67.86 BTOC	**Sample Equipment** ___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	Dissolved Oxygen Meter: X YSI 556	pH 10 = ___ at ___ °C Lot # Exp.		
Water Thickness (ft.)	___ Peristaltic Pump ___ Dedicated Pump	___ Other Serial No.	Conductance Standard: 1413 umhos/cm Other:		
~18.6	___ 2" Grundfos ___ Waterra Pump	ORP Meter:	Calibrated to ___ umhos/cm at ___ °C		
Casing Volume (gal.)	___ Geotech Pump X Other: Bailer	X YSI 556 ___ Other	Lot # Exp.		
~ 2.8		Serial No.	Dissolved Oxygen: Calibrated to ___ mg/l at ___ °C		
Stick-up (ft.) / **Screen Int.** 60-85 (ft.)	Serial Number:	Water Level Meter:	Redox:		
	Filtration Equipment:	___ Keck	Calibrated to ___ mV at ___ °C		
	0.45 *Micron Filter*	X Other: Geotech	Lot # Exp.		
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech		Sample Depth (feet)		Time:
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	9	55.2 / 21.15	2119	5.7	8.69	-47.6	NA	NA	NA	Cloudy, gray, brown

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals - U-Rb-S (field filtered), Total Metals u-Hg, Anions, TDS, PAH, PCB

P, 8260

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

Approximately 6 gallons removed by driller during development.

PPE Level: B C D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-1A	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	16:30	12/10/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
1.913	___ Dedicated Pump	___ Other:			
	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
85.00	X Other: Bailer	X YSI 556			
		___ Orion			
Static Water Level (ft.)	Serial Number:	___ Other:			
67.55	**Sample Equipment**	Serial No.:			
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
Water Thickness (ft.)	___ 1.80" Bennett Pump	X YSI 556			
~18.90	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
Casing Volume (gal.)	___ 2" Grundfos	ORP Meter:			
2.82	___ Waterra Pump	X YSI 556			
	___ Geotech Pump	___ Other			
Stick-up 1.45 (ft.) / Screen Int. 60-85 (ft.)	X Other: Bailer	Serial No.			
	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
Purge Containerized:	0.45 *Micron Filter*	X Other:			
X Yes ___ No	Brand: Geotech	Serial No.			

Meter Calibration

Time:

pH 4 = 4.00 at 15 °C
Lot # Exp.

pH 7 = 7.05 at 15 °C
Lot # Exp

pH 10 = 10.12 at 15 °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to 1413 umhos/cm at 15

Lot # Exp.

Dissolved Oxygen:
Calibrated to 8.67 mg/l at 15 °C

Redox:
Calibrated to 229 mV at 15 °C
Lot # Exp.

Sample Depth (feet) | Time:

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	2.8	62.6 / 33.8	2232	2.4	7.53	-2.4		NA	NA	Cloudy brown
	5.6	60.5 / 38.8	2290	2.2	7.88	24.6		NA	NA	Cloudy brown
	8.5	63.4 / 34.2	2266	1.8	7.69	34.4		NA	NA	Cloudy brown

Analyses requested Full Suite Partial Suite (explain)

Ra 226/227, Rn, EDB, CN Phenol

PID/FID Readings *Initial Readings:* *Sample Readings*

___ HNu	TOC: NA	TOC: NA
___ OVA	BZ: NA	BZ: NA
___ Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

PPE Level: B C D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 **of**

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-1B	___ 1.40" Bennett Pump	pH meter (temperature):	JC	9:25	12/11/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
1.913	___ Dedicated Pump	___ Other:			
	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
85.00	X Other: Bailer	X YSI 556			
		___ Orion			
Static Water Level (ft.)	Serial Number:	___ Other:			
66.05	**Sample Equipment**	Serial No.:			
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
Water Thickness (ft.)	___ 1.80" Bennett Pump	X YSI 556			
19.00	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
Casing Volume (gal.)	___ 2" Grundfos	ORP Meter:			
3.10	___ Waterra Pump	X YSI 556			
	___ Geotech Pump	___ Other			
	X Other: Bailer	Serial No.			
Stick-up 1.30 (ft.)	Serial Number:	Water Level Meter:			
Screen Int. 15-35 (ft.)	**Filtration Equipment:**	___ Keck			
	0.45 *Micron Filter*	X Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # 3AF099 Exp. 06/15

pH 7 = _____ at _____ °C
Lot # 3AE725 Exp 05/15

pH 10 = _____ at _____ °C
Lot # 3AE634 Exp. 05/15

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C

Lot # 3AF774 Exp. 06/14

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # 3AE866 Exp. 02/14

Sample Depth (feet) | Time:

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
10:09	3.1	59	2544	3.5	7.88	-94.3				Murky brown
10:30	6.2	68	2234	0.60	7.95	-35.6				Murky brown
10:45	3.3	68.6	2893	1.8	7.96	-19.3				Murky brown

Analyses requested Full Suite Partial Suite (explain)

Dissolved metals - Rb-5 (field filtered), total metals U-hg, Anions, TDS, PAH, PCB, P, 8260, Ra 226/227, Rn EDB, CN, Phenol

PID/FID Readings

	Initial Readings:	*Sample Readings*
___ HNu	TOC: NA	TOC: NA
___ OVA	BZ: NA	BZ: NA
___ Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

Temp of water out of well: 164.6°F

PPE Level: B C D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 **of**

Well No.	Sampler's Initials	Time	Date
MW-2 & Dup	EDK	9:00**	11/25/2013

Purge Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- X Geotech Pump
- ___ Other:

Serial Number:

Sample Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- ___ Geotech Pump
- X Other: Bailer

Serial Number:

Filtration Equipment: 0.45 *Micron Filter*

Brand: Geotech

Analytical Equipment

pH meter (temperature):
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Conductivity Meter:
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Dissolved Oxygen Meter:
- X YSI 556
- ___ Other

Serial No.

ORP Meter:
- X YSI 556
- ___ Other

Serial No.

Water Level Meter:
- ___ Keck
- X Other: Geotech

Serial No.

Meter Calibration

Time:

pH 4 = ___ at ___ °C
Lot # Exp.

pH 7 = ___ at ___ °C
Lot # Exp

pH 10 = ___ at ___ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to ___ umhos/cm at ___ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to ___ mg/l at ___ °C

Redox:
Calibrated to ___ mV at ___ °C
Lot # Exp.

Casing Diameter (in.)	Total Well Depth (ft.)	Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up (ft.)	Screen Int. (ft.)
1.913	80.00	69.98 TOC	~11.5	1.70		55-80

Purge Containerized: X Yes ___ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet): Time:

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved 0_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	11 gal	64.3 / 37.22	1704	2.34	8.14	10.5	NA	NA		Cloudy gray brown
	18 gal	64.1 / 37.5	1659	2.28	8.32	52.4	NA	NA		Cloudy gray brown
	24 gal	65.2 / 36.1	1650	2.36	8.24	57.7	NA	NA		Cloudy gray brown
	*29 gal	65.0 / 36.6	1703	2.93	8.59	36.2	NA	NA		Cloudy gray colorless
	35 gal	61.4 / 37.2	1683	2.40	8.22	41.5	NA	NA		Slightly cloudy gray colorless
		? / 37.3	1657	2.59	8.52	57	NA	NA		Slightly cloudy gray colorless

Analyses requested Full Suite Partial Suite (explain)

Dissolved metals (field filtered) - Rb-S, Total Metals-U-Hg, Anions, TDS, PAH, PCB, P, 8260

*Pump down for appx. 1-hour

Additional Comments: **Duplicate Sampled at this well simultaneously

Appx. 8 gallons removed by drillers during development.

PPE Level: D

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 **of**

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-2 & Dup	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	11:00	12/10/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
1.913	___ Dedicated Pump	___ Other:			
	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
80.00	X Other: Bailer	X YSI 556			
		___ Orion			
Static Water Level (ft.)	Serial Number:	___ Other:			
69.85	**Sample Equipment**	Serial No.:			
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
Water Thickness (ft.)	___ 1.80" Bennett Pump	X YSI 556			
11.35	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
Casing Volume (gal.)	___ 2" Grundfos	ORP Meter:			
1.69	___ Waterra Pump	X YSI 556			
	___ Geotech Pump	___ Other			
Stick-up 1.20 (ft.)	X Other: Bailer	Serial No.			
Screen Int. 15-35 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other: Bailer			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = 4.002 at 15 °C
Lot # Exp.

pH 7 = 7.05 at 15 °C
Lot # Exp

pH 10 = 10.12 at 15 °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to 1413 umhos/cm at 15

Lot # Exp.

Dissolved Oxygen:
Calibrated to 8.67 mg/l at 15 °C

Redox:
Calibrated to 229 mV at 15 °C
Lot # Exp.

Sample Depth (feet) | Time:

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
		67.4 / 36.0	1744	2.93	6.58	117.1		NA	NA	Cloudy translucent brown
		67.2 / 33.9	1719	2.40	7.64	82.6		NA	NA	Cloudy translucent brown
		68.3 / 32.5	1725	2.65	7.85	77.5		NA	NA	Cloudy translucent brown

Analyses requested Full Suite Partial Suite (explain)

Ra226/227, Cyanide, 504.1, Phenols

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 **of**

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-3	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump ___ Peristaltic Pump ___ Dedicated Pump ___ 2" Grundfos ___ Waterra Pump ___ Geotech Pump X Other: Bailer	pH meter (temperature): X YSI 556 ___ Orion ___ Other: Serial No.: Conductivity Meter: X YSI 556 ___ Orion ___ Other: Serial No.:	EDK	22:00	11/24/2013
Casing Diameter (in.)					
1.913					
Total Well Depth (ft.)					
80.00					
Static Water Level (ft.)	Serial Number:				
73.66 TOC	**Sample Equipment**				
	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump ___ Peristaltic Pump ___ Dedicated Pump ___ 2" Grundfos ___ Waterra Pump ___ Geotech Pump X Other: Bailer	Dissolved Oxygen Meter: X YSI 556 ___ Other Serial No. ORP Meter: X YSI 556 ___ Other Serial No.			
Water Thickness (ft.)					
~7.8					
Casing Volume (gal.)					
~1.2					
Stick-up (ft.) / **Screen Int.** 55-80 (ft.)	Serial Number:	Water Level Meter: ___ Keck X Other: Geotech Serial No.			
Purge Containerized:	**Filtration Equipment:**				
X Yes ___ No	0.45 *Micron Filter* Brand: Geotech				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet) | Time: 22:00

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	4	73.9 / 32.2	1938	2.11	8.83	-65.1	NA	NA	NA	Cloudy gray brown
	5	75.1 / 34.5	1745	1.81	9.25	-89.7	NA	NA	NA	Cloudy gray brown
	6	74.2 / 23.7	1737	3.50	9.33	-75.6	NA	NA	NA	Cloudy gray brown
	7	71.0 / 22.1	1733	3.81	9.44	-88.1	NA	NA	NA	Cloudy gray brown
	8	74.9 / 26.3	1710	3.72	9.40	-152.7	NA	NA	NA	Cloudy gray brown
	9	77.2 / 25.6	1707	4.94	9.28	--	NA	NA	NA	Cloudy gray brown

Analyses requested Full Suite Partial Suite (explain)

Dissolved metals - Rb-S (field filtered, Total Metals - u-Hg, Anions, TDS, PAH, PCB, P, 8260

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: Approx. 3 gallons removed by drillers during development. Submersible pump no longer working

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-3	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	20:30	12/10/2013
	___ 1.80" Bennett Pump	_X_ YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	_X_ Other: Bailer	_X_ YSI 556			
80.00		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
73.24	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	_X_ YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
7.85	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	_X_ YSI 556			
	_X_ Other: Bailer	___ Other			
1.17		Serial No.			
Stick-up (ft.) 1.09 / Screen Int. (ft.) 55-80	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	_X_ Other: Geotech			
		Serial No.			
Purge Containerized:	Brand: Geotech				
_X_ Yes ___ No	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4002 = 3.72 at 15 °C
Lot # 3AF099 Exp.

pH 7.05 = 7.43 at 15 °C
Lot # 3AE725 Exp

pH 10.12 = 9.67 at 15 °C
Lot # 3AE634 Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to 1413 umhos/cm at 15 °C

Lot # Exp.

Dissolved Oxygen:

Calibrated to 8.67 mg/l at 15 °C

Redox:

Calibrated to 229 mV at 15 °C

Lot # Exp.

Sample Depth (feet) | Time: 12:10

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	1.2	84.2 / 33.8	1870	1.59	8.11	-161.8	--	NA	NA	Cloudy Translucent
	2.4	84.7 / 42.0	1839	0.98	8.24	-173.6	--	NA	NA	Cloudy Translucent
	3.5	85.7 / 37.3	1861	1.27	8.64	-220.4	--	NA	NA	Cloudy Translucent

Analyses requested Full Suite Partial Suite (explain)

phenols, cynaide, 504.1, Ra 226/227

Additional Comments

PPE Level: D

PID/FID Readings

		Initial Readings:	Sample Readings:
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET
SVOA QC SAMPLE

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Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-4	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	14:35	11/24/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
1.913	___ Dedicated Pump	___ Other:			
	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
~80'	X Other: Bailer	X YSI 556			
		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
67.66 TOC	**Sample Equipment**				
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
~13.8	___ Dedicated Pump	Serial No.			
	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
2.10	X Other: Bailer	___ Other			
		Serial No.			
Stick-up 1.38 (ft.) / **Screen Int.** 55-80 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other: Geotech			
		Serial No.			
Purge Containerized:	Brand: Geotech				
X Yes ___ No	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	22	44.9 / 34.1	3912	2.98	7.64	33.7	NA	NA	~1.3	Cloudy Brown
	26	45.4 / 38.1	3883	2.07	7.56	--	NA	NA		Cloudy Brown
	30	45.7 / 35.7	3901	1.91	7.47	77.5	NA	NA		Cloudy Brown
12:30	33	44.2 / 37.2	3812	1.87	7.48	75	NA	NA		Cloudy Brown
	35	45.2 / 37.7	3818	2.0	7.49	68.1	NA	NA		Cloudy Brown
		45.0 / 36.6	3786	1.74	7.48	66.1	NA	NA		Slightly cloudy colorless
	40	44.6 / 36.6	3773	2.0	7.49	63.4	NA	NA		
	43	44.6 / 36.7	3760	1.81	7.5	63.2	NA	NA		

Analyses requested (Full Suite) Partial Suite (explain)

Dissolved Metals - Rb - S (field filtered), Total Metals - u - Hg, Anions, TDS, PAH, PCB, P, 8260

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

Appx. 20 gallons removed by drillers during development

PPE Level: D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

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Well No.	Sampler's Initials	Time	Date
MW-4	EDK	18:00	12/9/2013

Purge Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- ___ Geotech Pump
- X Other: Bailer

Serial Number:

Sample Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- ___ Geotech Pump
- X Other: Bailer

Serial Number:

Filtration Equipment: 0.45 *Micron Filter*

Brand: Geotech

Analytical Equipment

pH meter (temperature):
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Conductivity Meter:
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Dissolved Oxygen Meter:
- X YSI 556
- ___ Other

Serial No.

ORP Meter:
- X YSI 556
- ___ Other

Serial No.

Water Level Meter:
- ___ Keck
- X Other: Geotech

Serial No.

Meter Calibration

Time:

pH 4 = ___ at ___ °C
Lot # 3AF099 Exp. 06/15

pH 7 = ___ at ___ °C
Lot # 3AE725 Exp 05/15

pH 10 = ___ at ___ °C
Lot # 3AE634 Exp. 05/15

Conductance Standard: 1413 umhos/cm Other:

Calibrated to ___ umhos/cm at ___ °C

Lot # 3AF774 Exp. 06/14

Dissolved Oxygen:
Calibrated to ___ mg/l at ___ °C

Redox:
Calibrated to ___ mV at ___ °C
Lot # 3AE866 Exp. 02/14

Casing Diameter (in.)	Total Well Depth (ft.)	Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up	Screen Int.
1.913	80.00	67.68 TOC	13.70	2.05	1.38 (ft.)	55-80 (ft.)

Purge Containerized: X Yes ___ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	2	49.8 / 35.8	4234	1.84	7.19	36.3	--	NA	NA	Cloudy Brown
	4	50.2 / 35.7	3986	1.59	7.23	40.0	--	NA	NA	Cloudy Brown
	6	49.7 / 34.3	3955	1.35	7.27	38.6	--	NA	NA	Cloudy brown

Analyses requested Full Suite Partial Suite (explain)

Ra 226/227, Phenol, Cyanide, EDB

Additional Comments:

PPE Level: D

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 **of**

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-5	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	12:15	11/24/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	X Geotech Pump	Conductivity Meter:			
	X Other: Bailer	X YSI 556			
78.00		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
76.01 BTOC	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
~3.5	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
	X Other: Bailer	___ Other			
~0.5		Serial No.			
Stick-up (ft.) / **Screen Int.** 63-78 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other:			
		Serial No.			
Purge Containerized:	Brand: Geotech				
X Yes ___ No	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	~2	35.2	3773	1.9	8.1	144.2	NA	NA	~1.3 gpm w/pump	Yellowish gray, cloudy

Pumped dry then bailed dry, recovered an additional gallon total (after drillers).
Well did not go dry during sampling the following morning.

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals - Rb-S (field filtered), Total Metals -U-Hg, Anions, TDS, PAH, PCB, P, 8260

Additional Comments:
< 1 gallon removed by drillers during development - bailed dry

PPE Level: B C D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-5	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump ___ Peristaltic Pump ___ Dedicated Pump ___ 2" Grundfos ___ Waterra Pump ___ Geotech Pump X Other: Bailer	pH meter (temperature): X YSI 556 ___ Orion ___ Other: Serial No.: Conductivity Meter: X YSI 556 ___ Orion ___ Other: Serial No.: Dissolved Oxygen Meter: X YSI 556 ___ Other Serial No. ORP Meter: X YSI 556 ___ Other Serial No. Water Level Meter: ___ Keck X Other: Geotech Serial No.	EDK	12:00	12/9/2013

Casing Diameter (in.)	Total Well Depth (ft.)	Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up (ft.)	Screen Int. (ft.)
1.913	78.00	76.05	3.247	0.485	1.297	63-78

Serial Number:

Sample Equipment

___ 1.40" Bennett Pump
___ 1.80" Bennett Pump
___ Peristaltic Pump
___ Dedicated Pump
___ 2" Grundfos
___ Waterra Pump
___ Geotech Pump
X Other: Bailer

Serial Number:

Filtration Equipment:

0.45 *Micron Filter*

Brand: Geotech

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Purge Containerized: X Yes ___ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet) | Time: 12:00

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	0.06	47.0 / 38.3	2865	2.5	7.09	31.1	NA	NA	NA	Cloudy yellowish gray
	1	48.1 / 36.8	2802	2.5	7.16	43.4	NA	NA	NA	Cloudy yellowish gray
	1.5	/ 29.7	2871	3.9	7.38	27.3	NA	NA	NA	Cloudy yellowish gray

Analyses requested Full Suite Partial Suite (explain)

Ra 226/227, Phenols, Cyanide, EOB

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: Well went dry a few times during purging/sampling

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-6	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	12:00	11/23/2013
	___ 1.80" Bennett Pump	___ YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	X Other: Bailer	___ YSI 556			
85.00		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
67.12 TOC	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	___ YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
~19.4	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	___ YSI 556			
	X Other: Bailer	___ Other			
~2.9		Serial No.			
Stick-up (ft.) / Screen Int. (ft.)	Serial Number:	Water Level Meter:			
60-85	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	___ Other:			
		Serial No.			
Purge Containerized:	Brand: Geotech				
X Yes ___ No	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) (ft.) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	25	48.9 / 34.1	2563	2.32	7.57	76.3	NA	NA	~ 1gal/mi	Cloudy brown
	29	47.8 / 35.9	2540	2.12	7.86	54.7	NA	NA		
	33	47.3 / 35.8	2505	2.09	7.78	41.5	NA	NA		
	37	48.2 / 35.3	2529	2.30	7.88	48.4	NA	NA		
	41	48.4 / 34.7	2534	2.42	7.87	68.2	NA	NA		
	45	48.3 / 35.7	2519	2.48	7.81	48.6	NA	NA		
	50	49.7 / 34.5	2518	2.77	7.78	43.9	NA	NA		Slightly cloudy, colorless
	55	48.2 / 36.7	2539	2.17	7.78	30.1	NA	NA		

Analyses requested (Full Suite) Partial Suite (explain)

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-6	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	pH meter (temperature): X YSI 556	EDK	15:00	12/9/2013
Casing Diameter (in.)	___ Peristaltic Pump ___ Dedicated Pump	___ Orion ___ Other:	**Meter Calibration**		
1.913	___ 2" Grundfos ___ Waterra Pump	Serial No.:	Time:		
Total Well Depth (ft.)	___ Geotech Pump X Other: Bailer	Conductivity Meter: X YSI 556	pH 4 = _____ at _____ °C Lot # Exp.		
85.00		___ Orion ___ Other:	pH 7 = _____ at _____ °C Lot # Exp		
Static Water Level (ft.)	Serial Number:	Serial No.:			
67.01	**Sample Equipment** ___ 1.40" Bennett Pump	Dissolved Oxygen Meter: X YSI 556	pH 10 = _____ at _____ °C Lot # Exp.		
Water Thickness (ft.)	___ 1.80" Bennett Pump ___ Peristaltic Pump	___ Other Serial No.	Conductance Standard: 1413 umhos/cm Other:		
19.594	___ Dedicated Pump ___ 2" Grundfos		Calibrated to _____ umhos/cm at _____ °C		
Casing Volume (gal.)	___ Waterra Pump ___ Geotech Pump	ORP Meter: X YSI 556	Lot # Exp.		
2.92	X Other: Bailer	___ Other Serial No.	Dissolved Oxygen: Calibrated to _____ mg/l at _____ °C		
Stick-up 1.6 (ft.)	**Screen Int.** 60-85 (ft.)	Serial Number:	Water Level Meter:	Redox: Calibrated to _____ mV at _____ °C	
		Filtration Equipment:	___ Keck	Lot # Exp.	
Purge Containerized:		0.45 *Micron Filter*	X Other: Geotech		
X Yes ___ No		Brand: Geotech	Serial No.	Sample Depth (feet) (ft.)	Time:
		Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)			

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	3	48.8 / 24.8	2675	3.51	7.83	29.8	NA	NA	NA	Cloudy brown
	6	49.6 / 36.5	2551	1.87	7.70	54.4	NA	NA	NA	Cloudy brown
	9	48.8 / 36.7	2570	1.62	7.60	42.1	NA	NA	NA	Cloudy brown

Analyses requested Full Suite Partial Suite (explain)

Ra 226/226, Phenols, Cyanide, EDB

Additional Comments:

PPE Level: D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
INW-1	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump ___ Peristaltic Pump ___ Dedicated Pump ___ 2" Grundfos ___ Waterra Pump ___ Geotech Pump X Other: Bailer	pH meter (temperature): X YSI 556 ___ Orion ___ Other: Serial No.: Conductivity Meter: X YSI 556 ___ Orion ___ Other: Serial No.: Dissolved Oxygen Meter: X YSI 556 ___ Other Serial No. ORP Meter: X YSI 556 ___ Other Serial No. Water Level Meter: ___ Keck X Other: Geotech Serial No.	EDK	17:00	12/20/2013

Casing Diameter (in.)	Total Well Depth (ft.)	Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up	Screen Int.
1.913	600.00	77.10	524.780	78.36	1.9 (ft.)	570-590 (ft.)

Serial Number:

Sample Equipment
___ 1.40" Bennett Pump
___ 1.80" Bennett Pump
___ Peristaltic Pump
___ Dedicated Pump
___ 2" Grundfos
___ Waterra Pump
___ Geotech Pump
X Other: Bailer

Serial Number:

Filtration Equipment:
0.45 *Micron Filter*

Brand: Geotech

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Purge Containerized: X Yes ___ No

Sample Depth (feet) _____ (ft.) Time:

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	~80	71.0 / 33.17	3660	1.51	9.78	20.7				
	~125	28.0 / 36.7	3642	1.18	9.86	-74.0				
	~165	29.6	2277	2.11	9.82	-53.6				

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals-Rb-S (Field Filtered) / Total Metals U-Hg, PAH, PCB, P, 8260
Ra 226/226, Phenol, EDB, RN,

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 of

Well No.	Sampler's Initials	Time	Date
LDG 53-7	JC/EDK	14:00	12/13/2013

Purge Equipment
- ____ 1.40" Bennett Pump
- ____ 1.80" Bennett Pump
- ____ Peristaltic Pump
- ____ Dedicated Pump
- ____ 2" Grundfos
- ____ Waterra Pump
- ____ Geotech Pump
- ____ Other: Bailer

Serial Number:

Sample Equipment
- ____ 1.40" Bennett Pump
- ____ 1.80" Bennett Pump
- ____ Peristaltic Pump
- ____ Dedicated Pump
- ____ 2" Grundfos
- ____ Waterra Pump
- ____ Geotech Pump
- ____ Other: Bailer

Serial Number:

Filtration Equipment: 0.45 *Micron Filter*

Brand: Geotech

Analytical Equipment

pH meter (temperature):
- ____ YSI 556
- ____ Orion
- ____ Other:

Serial No.:

Conductivity Meter:
- ____ YSI 556
- ____ Orion
- ____ Other:

Serial No.:

Dissolved Oxygen Meter:
- ____ YSI 556
- ____ Other

Serial No.

ORP Meter:
- ____ YSI 556
- ____ Other

Serial No.

Water Level Meter:
- ____ Keck
- ____ Other: Geotech

Serial No.

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Stick-up	Screen Int.
8' 4" (ft.)	(ft.)

Purge Containerized: _X_ Yes ____ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet) (ft.) Time:

Time	Volume Removed (liters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
13:11	1	2.25	634	7.09	6.77	61.3		40.24	NA	Clear
13:35	2.5	3.86	1020	2.05	6.51	58.7		40.38	NA	Clear
13:50	4	2.07	582	2.07	6.67	14.1		40.50		Clear
								40.68		

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals-12b-S (Field Filtered) / Total Metals U-Hg, PAH, PCB, P, 8260

Ra 226/226, Phenol, EDB, RN,

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
LDG 63-7	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	13:00	12/20/2013
	___ 1.80" Bennett Pump	___ YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
2	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	___ Other: Bailer	___ YSI 556			
		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	___ YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	___ YSI 556			
	___ Other: Bailer	___ Other			
		Serial No.			
Stick-up (ft.) / **Screen Int.** (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	___ Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) (ft.) Time:

Time	Volume Removed (liters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
13:30	2.5	56.1 / 35.38	1247	1.08	9.19	-3.1	--	NA	NA	Slightly cloudy, with dark sediment
15:00	~5	65.6 / 37.56	1266	1.00	9.64	28.6	--	NA	NA	Colorless, slight sheen

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals-12b-S (Field Filtered) / Total Metals U-Hg, PAH, PCB, P, 8260
Ra 226/226, Phenol, EDB, RN,

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

Cyrq

Lightning Dock
geothermal

Annual Geothermal Well Report

Owner/Operator:
Lightning Dock Geothermal HI-01, LLC
(a subsidiary of Cyrq Energy, Inc.)

Discharge Permit GTHT-001

Submitted by:

Nick Goodman
CEO of Cyrq Energy, Inc.
136 South Main Street, Ste. 600
Salt Lake City, UT 84101

31 January 2014

Table of Contents

Lightning Dock Geothermal HI-01, LLC
2013 Annual Geothermal Well Report

Lightning Dock Geothermal HI-01, LLC (LDG), formerly Los Lobos Renewable Power, LLC, hereby submits its 2013 Annual Geothermal Well Report pursuant to ¶21(P) of its Discharge Permit, dated July 1, 2009.

Background

Overview. LDG is the operator for two BLM Geothermal Resources Leases, NM-34790 (2,500.96 acres) and NM-108801 (640.00 acres), in Hidalgo County, New Mexico. LDG, which is owned by Cyrq Energy, Inc., has recently completed construction of Phase I of the development of Lightning Dock geothermal resource. Phase I uses geothermal fluids to generate electricity on a utility scale. All wells used in Phase I were drilled prior to 2013 (LDG 45-7, 47-7, 53-7, 55-7, and 63-7).

Technology. Cyrq Energy, Inc. currently operates a binary-cycle power plant in Thermo, Utah, which does not require steam (water vapor) to generate electricity. Instead, geothermal heat heats working fluid with a boiling point lower than the boiling point of water. The working fluid, when vaporized, turns a screw-style turbine to generate electricity. LDG's recently completed Phase I power plant at the Lightning Dock geothermal resource uses RF245 as the working fluid. When vaporized, RF245 turns the screw-style turbine in four Kaishan KE-1000 1,000 kW power modules which generate electricity. Thus, the technology involves two closed loops.

In the first closed loop, the hot geothermal fluid is pumped to the surface via a production well. The hot geothermal fluid—contained in a pipeline—enters the power plant at over 300° F and flows through a heat exchanger that transfers the heat to RF245, the working fluid. Subsequently, 100% of the geothermal fluid, cooled slightly to between 140° F -160° F, is returned to the same geothermal reservoir or fluid flow intervals via an injection well(s). The fluid is then naturally reheated to be used again and again. At the point where the geothermal fluid leaves the geothermal reservoir to the point where it returns to the reservoir, it remains contained in a pipe under pressure and in the fluid phase. It does not boil or flash or comingle with the working fluid, shallow freshwater aquifers, or air. There are no additives to the fluid, there is no surface ponding, no holding tanks, no evaporative losses. The fluid is contained in pipe or well casing during its entire journey, it is chemically unaltered, and is never exposed to the atmosphere.

The second closed loop contains the working fluid. The working fluid, too, is continuously contained in pipes. The working fluid gathers heat from the heat exchanger, vaporizes, turns the screw-style turbine, becomes cooled via the air-cooling fans, and then returns to the heat exchanger to recycle again and again. Please see Figure 1.

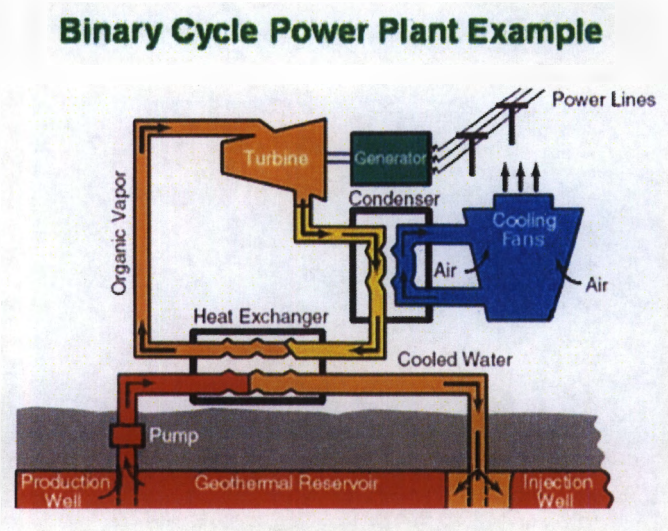

Figure 1

Because the fluids are constantly recycling through the geothermal reservoir at a steady rate, the geothermal reservoir maintains equilibrium

Public Interest. The Lightning Dock Geothermal project uses geothermal fluids to generate electricity on a utility scale. By contract, this electricity is sold to PNM and used by New Mexico customers. This project is in the public interest because geothermal heat is a renewable source of energy. In addition, geothermal heat is constant. It provides base load (i.e., 24/7) power, unlike wind and solar. Unlike other base-load sources of energy such as coal and natural gas, geothermal electricity is produced with zero emissions.

No Waste. Since the Lightning Dock Geothermal project relies on a geothermal closed-loop system, resulting in no net depletion of the geothermal reservoir, and is constantly returning the thermally depleted fluids to the geothermal reservoir for reheating, the project is in the interest of conservation. Further, the project prevents waste because the geothermal fluids are beneficially used to generate electricity that will be used by New Mexico customers.

Correlative Rights. Existing leases in the Lightning Dock geothermal area are: Los Lobos/LDG (3,140.96 acres of geothermal resources leased from BLM), Rosette, Inc. (313.59 acres of geothermal resources leased from NM State Land Office) and AmeriCulture, Inc. (10 acres of geothermal resources leased from NM State Land Office). In addition, the McCants family owns at least 240 acres of property with mineral rights in the Lightning Dock geothermal area. The Lightning Dock Geothermal project protects correlative rights and allows each leaseholder and owner their just and equitable share of recoverable geothermal resources.

Discharge Permit Requirements

1. **Cover Sheet.** Please see cover page.

2. **Comprehensive summary of all geothermal well operations, including description and reason for any remedial work; include G-103s.**
   Summary: The following table summarizes changes to LDG's geothermal wells in 2013:

LDG 45-7	Placed on production in 2013
LDG 47-7	Temporarily converted to monitoring well in 2013 (permitted as a production well)
LDG 53-7	Permitted as an injection well in 2013; built infrastructure to place well on injection
LDG 55-7	Permitted as an injection well in 2013; placed on injection in 2013
LDG 63-7	Built infrastructure to place well on injection in 2013 (permitted as an injection well in 2012)

   Remedial Work: In 2013, LDG performed a well cleanout of well LDG 55-7. United Drilling mobilized to LDG on 10/09/13; installed a blow-out preventer, rigged up, and began drilling on 10/10/13; completed drilling on 10/19/13; and demobilized on 10/20/13. Blank liner was installed between depths of 570' to 731' bgs, and non-cemented slotted liner was installed from depths of 731' to 1486' bgs, to protect the open hole. The approved G-103 forms and Cleanout and Completion Handbook for the cleanout are included at Tab 1.

   In 2013, LDG also performed mechanical integrity testing on LDG 55-7. The Mechanical Integrity Test chart is included at Tab 4.

3. **Production and injection volumes, including a running total to be carried over each year (summary of the monthly filed production and injection reports, forms G-108 and G-110).**
   Total amount produced in 2013: 37.1 AF Total amount injected in 2013: 37.1 AF

4. **Copies of chemical analyses in accordance with Permit Condition 20 (Water Quality Monitoring Program).** Copies of the laboratory analytical sheets for the samples collected from the groundwater quality monitoring wells, production wells, and injection wells in 2013 are included at Tab 2_. Copies of the well development and field sampling sheets are included at Tab 3.

5. **A copy of any mechanical integrity test chart in accordance with Permit Condition 2l.H.** A mechanical integrity test was performed on Well LDG 55-7 in 2013. Please see Tab 4 for the properly signed and dated circular test chart and calibration.

6. **A copy of the annual subsidence survey data results.** On December 17, 2013, prior to power plant startup on December 20, 2013, LDG caused the well top-of-casing and ground elevations to be surveyed. Those baseline elevations are included at Tab 5.

7. **Brief explanation describing deviations from normal production methods.** After commissioning the power plant, there has been no deviation from normal production methods.

8. **Copies of any leaks and spill reports submitted in accordance with Permit Condition** There were no leaks or spills to report in 2013.

9. **A copy of analytical data results from annual groundwater monitoring including the QA/QC Laboratory Summary.** LDG installed six shallow groundwater quality monitoring wells (MW-1 through MW-6) and one intermediate depth (INW-1) groundwater quality monitoring well in 2013 and converted one of its geothermal production wells (LDG 47-7) into a deep up-gradient monitoring well (MW 47-7). Each of these wells was sampled prior to power plant startup which took place on December 20, 2013. Additionally, all the production and injection wells were also sampled prior to power plant startup. Groundwater monitoring well permits issued by the New Mexico Office of the State Engineer are presented in Tab 6. Prior to November 2013, water quality data for the geothermal reservoir was available only from historic samples collected from production or injection wells LDG 45-7, LDG 53-7, LDG 55-7 and LDG 63-7. A comprehensive tabular summary of all groundwater samples collected from the geothermal wells prior to December 31, 2013 is included in Table 1 at Tab 7 and a comprehensive summary of all groundwater samples collected from the water quality monitoring wells prior to plant startup is included in Table 2 at Tab-7.

10. **An updated Area of Review (AOR) summary when any new wells are drilled within 1/4 mile of any UIC Class V Geothermal Injection Well (see (20.6.2 NMAC).** LDG's permitted UIC Class V Geothermal Injection Wells are LDG 53-7, 55-7 and 63-7. LDG is not aware of any wells drilled within 1/4 mile of LDG 53-7, 55-7 and 63-7 that penetrate these wells' injection zones.

11. **Miscellaneous section to include any other issues that should be brought to OCD's attention.** LDG anticipates a discussion on the necessity of operating our power plant under the auspices of a renewed Discharge Permit. And if it's decided we must renew our Discharge Permit in 2014, we anticipate modifications will have to be made. As indicated in last year's Annual Report, LDG installed air-cooling systems for the condensers on each power block, thus eliminating the sampling and analysis requirements of Table 5 of the Discharge Permit.

12. **Certification Form.** Please see following page.

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this 2013 Annual Geothermal Well Report, including all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

I further certify that I am a representative who performs similar policy-making functions for Lightning Dock Geothermal HI-01, LLC who has authority to sign for Lightning Dock Geothermal HI-01, LLC.

Yours sincerely,

Signature: Mike Gipson

Printed Name: Mike Gipson

Title: Director of Operations

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease State ☐ Fee ☐

5.a State Lease No. Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit –" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☑ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☐

7. Unit Agreement Name

2. Name of Operator: Los Lobos Renewable Power, LLC

8. Farm or Lease Name

3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101

9. Well No. LDG 55-7

4. Location of Well
Unit Letter J 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.

10. Field and Pool, or Wildcat: Lightning Dock Geothermal

15. Elevation (Show whether DF, RT, GR, etc.): 4198 GR

12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐			COMMENCE DRILLING OPNS.	☐	PLUG & ABANDONMENT	☐
JLL OR ALTER CASING	☐	CHANGE PLANS	☐	CASING TEST AND CEMENT JOB	☐		
OTHER	☐			OTHER Cement bond log performed in			☑

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 203.

Subsequent notice of a cement bond log.

Baker Hughes performed a cement bond log on LDG 55-7 in 2008 and the cement bond appeared to be in good condition. Please find attached a copy of this cement bond log and consider it partial fulfillment of the mechanical integrity test that is required for this well to be placed on injection.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W. Mowrey, PG TITLE Agent for Los Lobos Renewable Power, LLC DATE March 22, 2013

APPROVED BY [signature] TITLE Environmental Engineer DATE 11/12/2013

CONDITIONS OF APPROVAL, IF ANY:

November 6, 2013

Project 1151700102

RECEIVED OCD

2013 NOV 12 P 4: 01

Mr. Carl Chavez, CHMM
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3490
CarlJ.Chavez@state.nm.us

RE: Subsequent Sundry Notice Form G-103 for Geothermal Production Well LDG 55-7 for Lightning Dock Geothermal HI-01, LLC, Section 7, Twp. 25S, Rng. 19W, Hidalgo County, New Mexico

Dear Mr. Chavez:

On behalf of Lightning Dock Geothermal HI-01, LLC, AMEC Environment & Infrastructure, Inc. (AMEC) respectfully submits the attached Subsequent Sundry Notice for the clean out and liner installation in LDG-55-7 following successful completion of the casing integrity testing. The liner was set at 1486 to 570 feet with 480 feet of overlap inside the production casing. We believe open hole to be present below 1486 feet but could not get the liner to pass this depth.

Mr. Dade will receive two originals at his office in Artesia. Thank you very much for your assistance in the development of this important energy project. Should you have questions regarding this sundry notice please do not hesitate to contact me by email at David.Janney@amec.com or by phone at (505) 821-1801.

Respectfully submitted,

David W. Janney

David W. Janney, PG
Agent for Lightning Dock Geothermal HI-01, LLC

Cc: Mr. Randy Dade – NMOCD Artesia
Mr. Chuck Smiley – Lightning Dock Geothermal HI-01, LLC
Ms. Michelle Henrie – Attorney for Lightning Dock Geothermal HI-01, LLC

Attachments

One (1) Form G-103 Sundry Notice for LDG 55-7

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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Operator		
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SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Fee ☐
5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit –" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☐ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☑
7. Unit Agreement Name:

2. Name of Operator: Lightning Dock Geothermal HI-01, LLC
8. Farm or Lease Name: Federal NM34790

3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101
9. Well No.: LDG 55-7

4. Location of Well
Unit Letter J 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.
10. Field and Pool, or Wildcat: Lightning Dock Geothermal

15. Elevation (Show whether DF, RT, GR, etc.): 4198 GR
12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG & ABANDONMENT ☐
PULL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER ☐		OTHER Well clean out and liner setting ☑	

17. Describe Proposed or completed Operations *(Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work)* SEE RULE 203.

Well cleanout and running slotted liner.

Well clean out was performed to a depth of 2349 feet between October 14 and 18, 2013.
Slotted liner was intended to be run to the total depth of 2349 feet. Due to tight hole at 1516 feet, slotted liner was only able to be run into the wellbore to a depth of 1486 feet. Open well bore occurs from 1486 feet to 2349 feet.

Liner overlap in the production casing was intended to be 100 feet. Liner over lap is now from 570 feet to 1050 feet.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W Hanna, PE TITLE Agent for Lightning Dock Geothermal HI-01, LLC DATE 11/8/2013

APPROVED BY [signature] TITLE Environmental Engineer DATE 12/17/2013

CONDITIONS OF APPROVAL, IF ANY:

July 8, 2013 Project 1151700102

Mr. Randy Dade
District 2 Supervisor
New Mexico Oil Conservation Division
811 South First Street
Artesia, NM 88210
575-748-1283
Randy.Dade@state.nm.us

RE: Sundry Notice Form G-103 for Geothermal Production Well LDG 55-7 for Los Lobos Renewable Power, LLC, Section 7, Twp. 25S, Rng. 19W, Hidalgo County, New Mexico

Dear Mr. Dade:

On behalf of Los Lobos Renewable Power, LLC, AMEC Environment & Infrastructure respectfully submits the attached Sundry Notice for the cleanout and completion of LDG 55-7. LDG 55-7 is located on federal geothermal lease NM 34790 in Hidalgo County, New Mexico. There is one original and one copy of the form included in this submittal. Mr. Carl Chavez will also receive an original at his office in Santa Fe. AMEC will also submit a Sundry Notice for this work to Mr. Patrick Moran with the Bureau of Land Management in Las Cruces, New Mexico and an equivalent type of form will be submitted to Mr. Martin McMillan with the New Mexico Office of the State Engineer in Deming.

Thank you very much for your assistance in the development of this important energy project. Should you have questions regarding these applications, please do not hesitate to contact me by email at David.Janney@amec.com or by phone at (505) 821-1801.

Respectfully submitted,

David W. Janney, PG
Agent for Los Lobos Renewable Power, LLC

Cc: Mr. Carl Chavez – NMOCD Santa Fe
Mr. Chuck Smiley – Los Lobos Renewable Power, LLC (Lightning Dock Geothermal HI-01, LLC)
Ms. Michelle Henrie – Attorney for Los Lobos Renewable Power, LLC

Attachments

Two (2) Forms G-103 Sundry Notice for LDG 55-7
Two (2) Cleanout & Completion program for LDG 55-7 by Capuano Engineering Consultants

AMEC Environment & Infrastructure, Inc.
8519 Jefferson, NE
Albuquerque, New Mexico 87113
(505) 821-1801
FAX: (505) 821-7371
www.amec.com

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Fee ☐
5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☑ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☐
7. Unit Agreement Name:
2. Name of Operator: Los Lobos Renewable Power, LLC
8. Farm or Lease Name:
3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101
9. Well No.: LDG 55-7
4. Location of Well: Unit Letter K 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.
10. Field and Pool, or Wildcat: Lightning Dock Geothermal
15. Elevation (Show whether DF, RT, GR, etc.): 4201 GR
12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG & ABANDONMENT ☐
LL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER Cleanout well and run slotted liner ☑		OTHER	

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 203.

Move on location and rig-up drilling rig.
Cleanout well to existing depth of 2,349 feet.
Run slotted liner with 100 feet of overlap to 2,349 feet.
Close master valve, rig-down, and move off location.

Please see attached LDG 55-7 Cleanout & Completion Program by Capuano Engineering Consultants for the details of this program.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W. Janney, PG TITLE Agent for Los Lobos Renewable Power, LLC DATE July 8, 2013

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

CyrQ

Lightning Dock
geothermal

LDG 55-7 Cleanout and Completion Program

Designed and Prepared By:

CAPUANO
ENGINEERING
CONSULTANTS

3883 Airway Drive
Suite 210
Santa Rosa, CA 95403
TELEPHONE: (707) 575-8740

Cyrq – Lightning Dock Geothermal Cleanout and Completion Program LDG 55-7

Drilling Program	
Operating Company	Cyrq – Los Lobos Renewable Power, LLC
Field	Lightning Dock
Well	LDG 55-7
Location	Sec 7 Twp 25 S R 19 W: Hidalgo County, NM
Well Type	Production Well
Drilling Engineer	Louis Capuano III
Date of Issue	July 8, 2013

		Signature	**Date**
Prepared	Louis Capuano III		
	Drilling Engineer	Capuano Engineering Consultants	

Table of Contents

Section:

Cyrq – Lightning Dock Geothermal Cleanout and Completion Program LDG 55-7

Section A: General Well Information

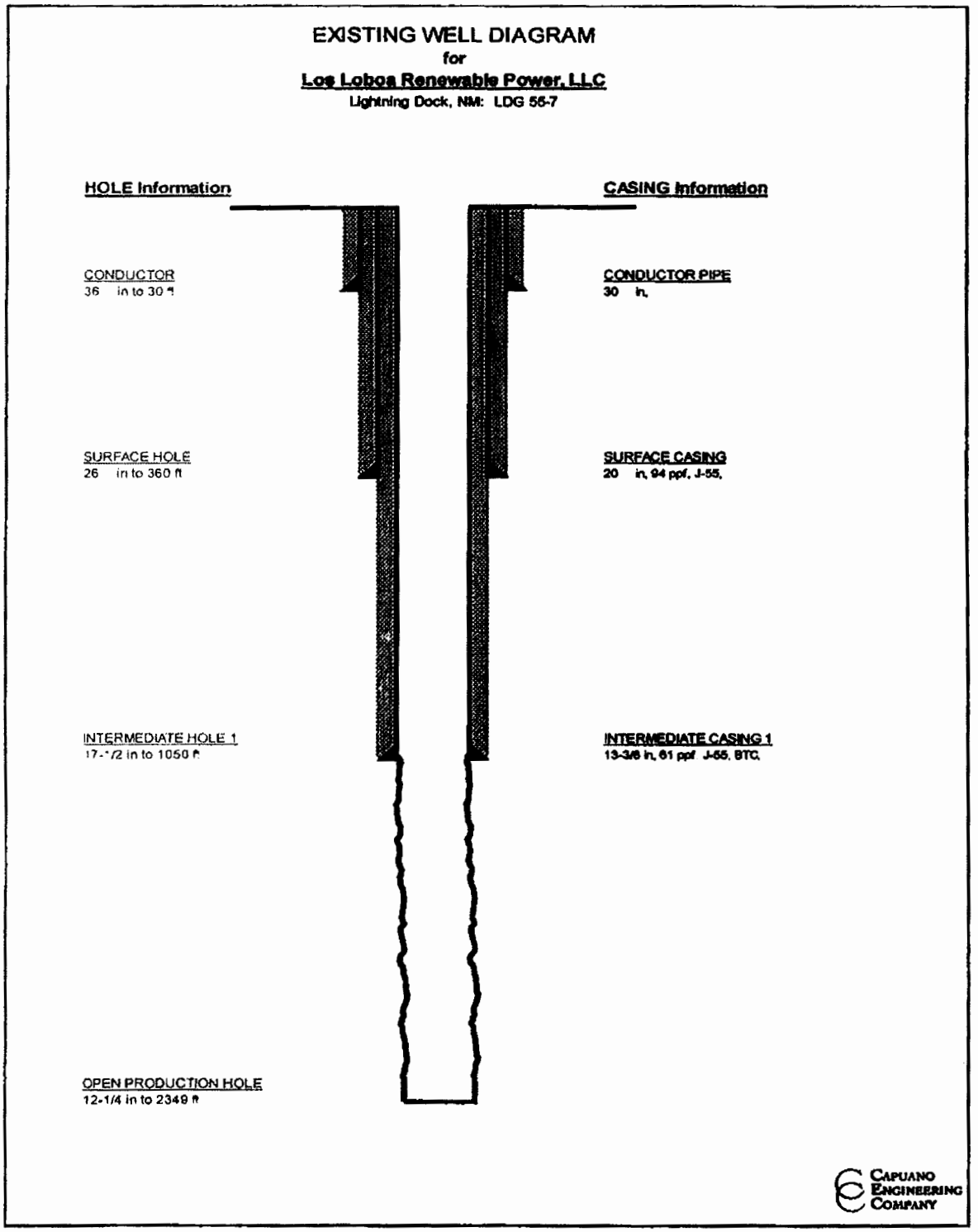
Well Information Table	
Los Lobos Renewable Power, LLC	LDG 55-7
Location	Section: 7, Township: 25S, Range: 19W County: Hidalgo County State: NM
Elevation	GL: 4208'
	Original KB: 15'
Original 1985 Total Depth	7001' MD
2010 Re-Opening Depth	2349' MD
Surface LAT/LONG	LAT = 32.144311 deg LONG = -108.835941

Section	Maximum Depth of Section		Casing
OH	MD	TVD	
36"	30'	30'	30", 135 ppf, J-55 BTC Casing
26"	360'	360'	20", 94 ppf, J-55, BTC
17-1/2"	1050'	1050'	13-3/8", 61 ppf, J-55, BTC Casing
12-1/4"	2349'	2349'	Open Hole

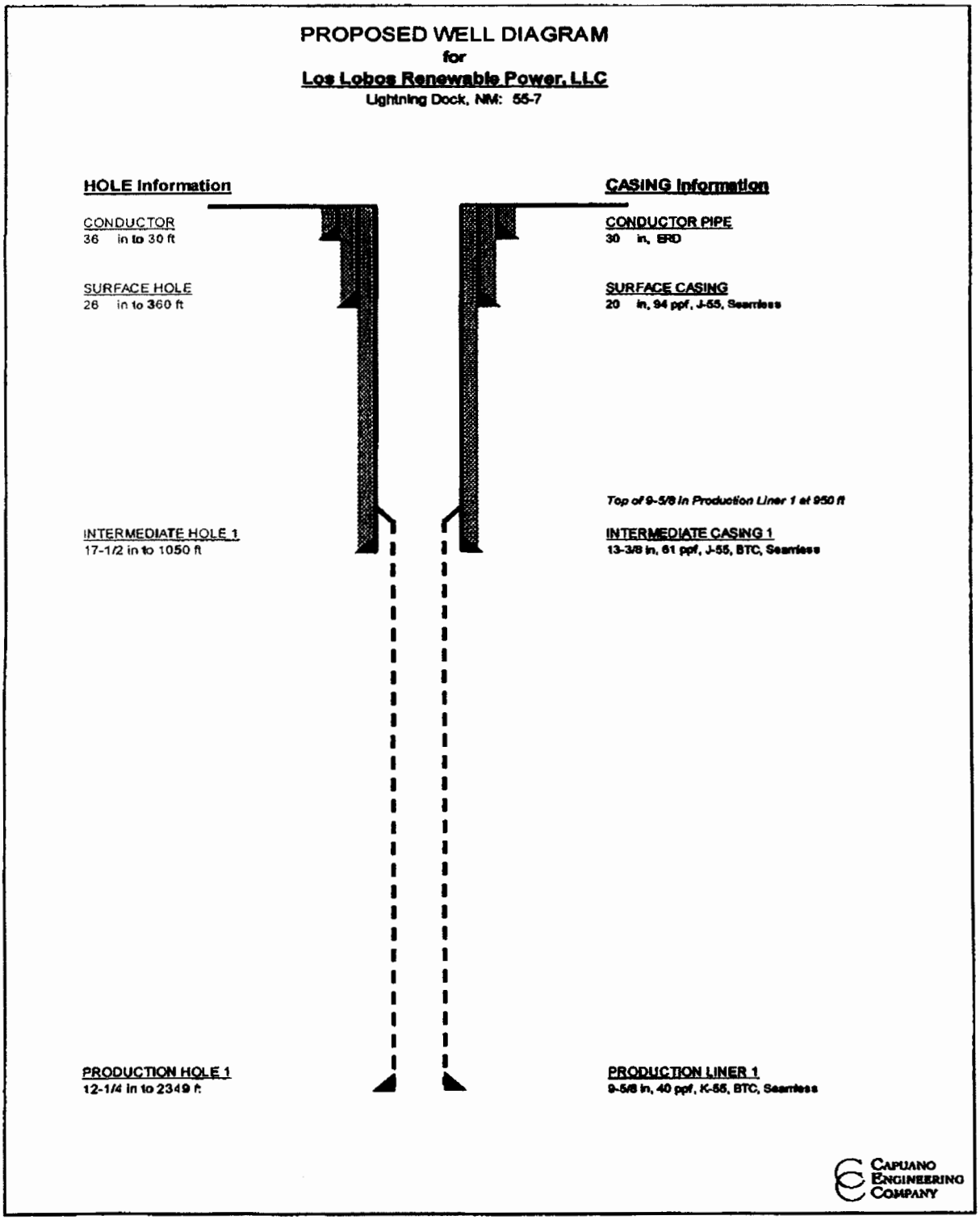
Wellhead Information	
Flange Size	Pressure Test (psi)
13-3/8" SOW x 12" ANSI 400 Series with two 2" LP outlets.	250 / 1000
12" 300 FE RTJ slab gate valve.	250 / 1000

Cyrq – Lightning Dock Geothermal
Cleanout and Completion Program
LDG 55-7

Existing Wellbore Schematic:



Proposed Wellbore Schematic:



Section B: Cleanout and Completion Program

Safety / Hazards Considerations in This Section:
During the cleanout and completion program, it is imperative to maintain a steady water supply to the rig. The well has shown signs of temperature and artesian flow. During all operations while the well is open, a steady flow of cool water will be introduced to the wellbore at a rate of approximately 10 gallons per minute. This will ensure that the flow from geothermal formations will stay killed. The fresh water will be supplied by fresh water well LDG 14-7. All clean out and subsequent procedure will utilize fresh water to ensure that no formation damage is incurred on the reservoir. Bentonite or clay-like products will not be used during the clean-out and completion program. All cuttings will be managed and disposed of properly.

Bit & Hydraulics Program		**Mud Program**	
Bit Type	12-1/4" Tri-cone	Mud Weight	8.33 ppg
Nozzles	3 x 20,	Mud Type	Fresh Water
IADC Code	3-1-5 to 4-2-7	Fluid Loss	N/A
RPM	60 – 80 RPM	YP	N/A
Pump Rate	400 – 700 gpm	PH	N/A
Run a maximum of 40,000 lbs of WOB. An average of 20,000 lbs to 30,000 lbs will suffice.			
12-1/4" BHA	12-1/4" Bit, Bit Sub, 2 x 8" DC, 8" Jar, 4 x 8" DC, XO, drill pipe.		

Procedure:

1. Move in and rig up on well.
   1.1. Nipple up BOP stack on wellhead.
   1.2. Move in water tank and fill.
2. Pick up and make up 12-1/4" Bottom Hole Assembly.
3. Run into well with assembly and drill pipe.
4. Tag bridge at approximately 1341'.
5. Pull up 5 ft and begin circulating water.
6. Begin rotation of bit at 70 rpm.
7. Tag and begin to drill out bridge.
   7.1. Continue to drill out bridge until clear open hole is reached or well TD is tagged at 2349'.
8. At section TD circulate, make a wiper trip to the 13-3/8" casing shoe and POOH.

8.1. Circulate and pull out of the hole.

8.2. Strap drill pipe, tools and collars to ensure hole depth.

9. Run 9-5/8", 40 ppf, K-55, BTC Slotted liner on a 13-3/8" x 9-5/8" liner adapter.

9.1. Plan liner for a 100' liner lap.

9.2. Lower four joints and upper four joints of the liner will be blank.

9.3. Equip liner with a guide shoe.

9.4. Weld the bottom four joints of casing.

9.5. Run liner in the hole on drill pipe.

9.6. Tag bottom.

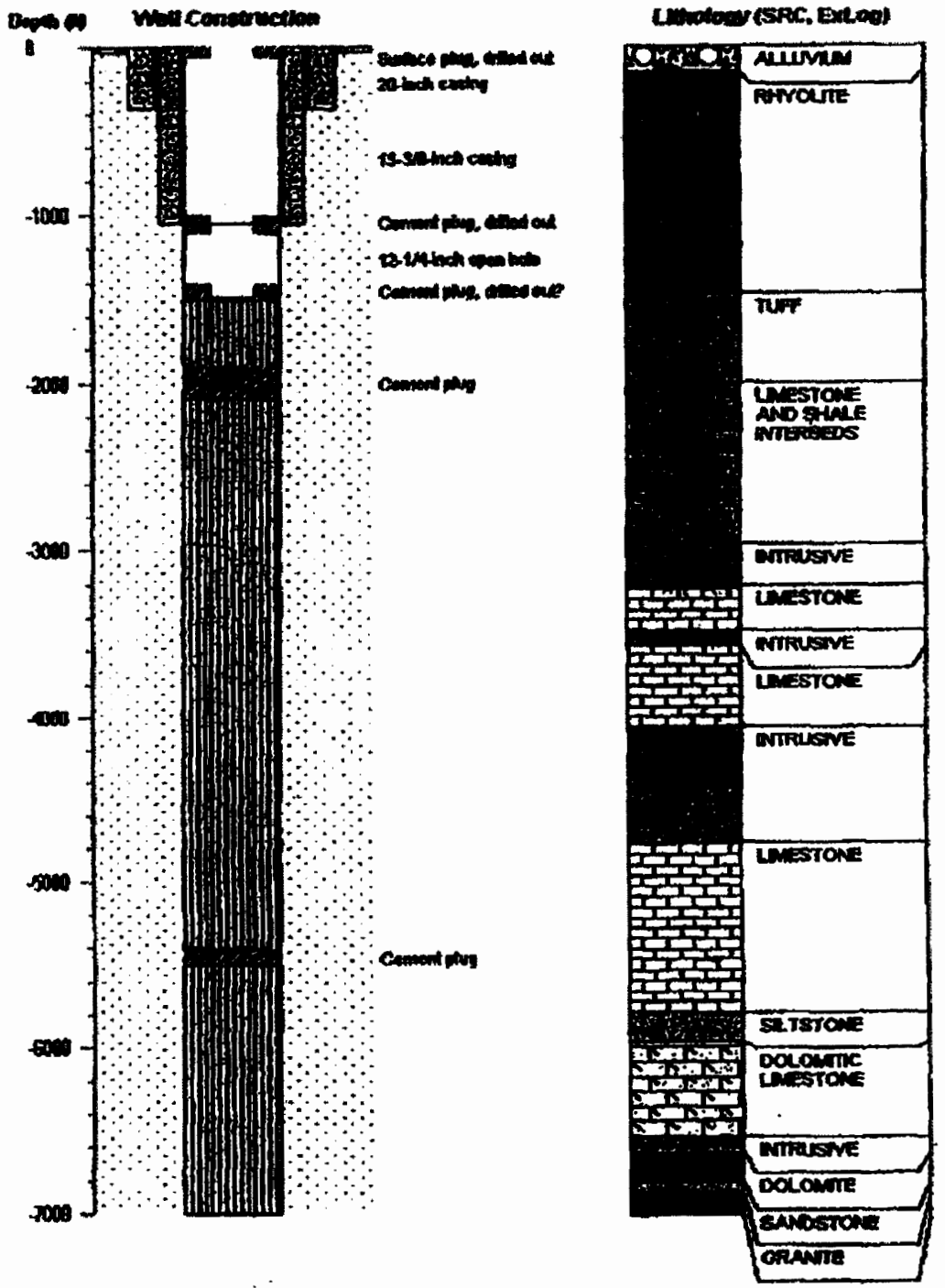
10. Release from liner adapter.

11. Pull out of the hole with tool and drill pipe.

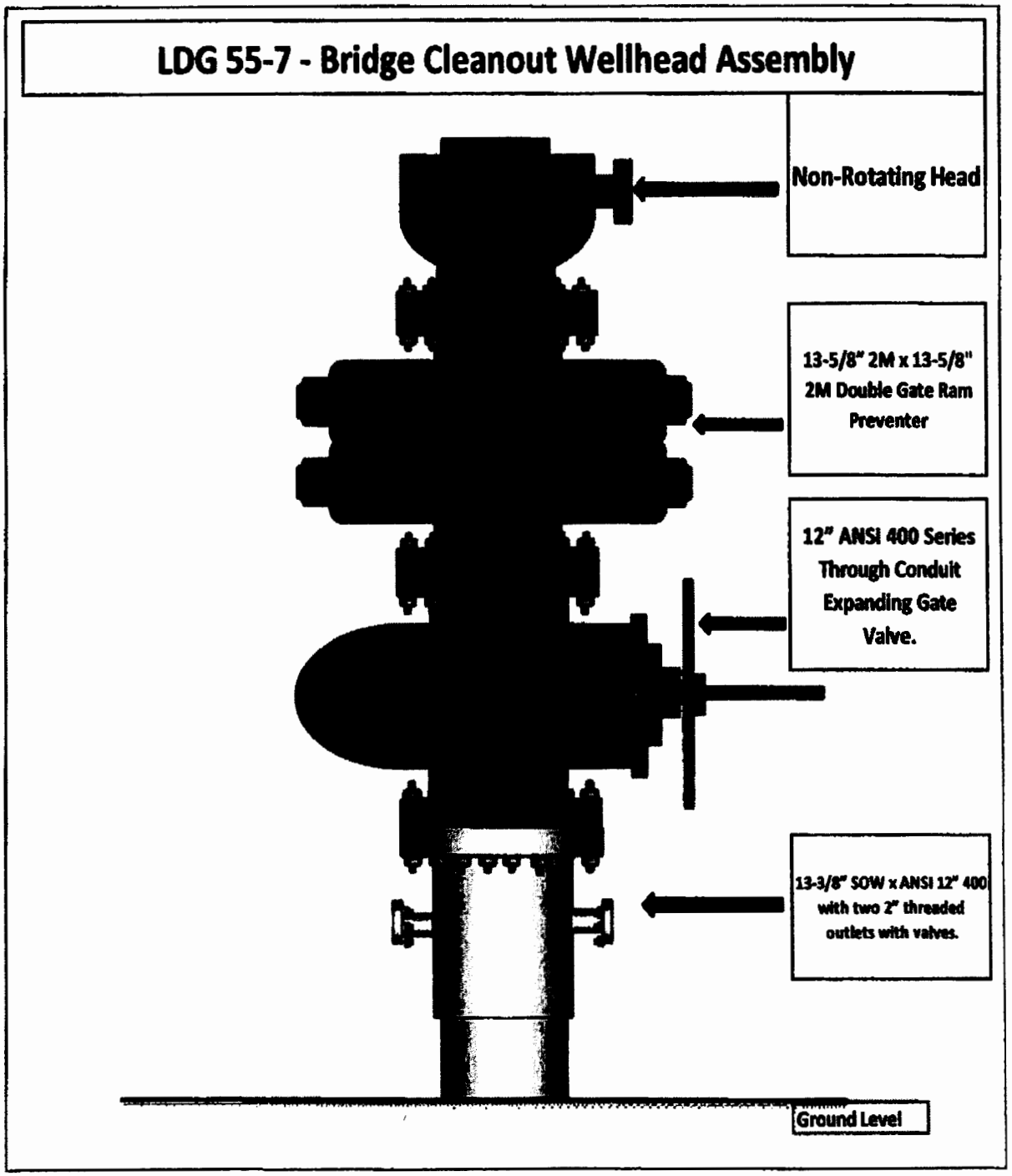
12. Close master valve and rig down.

Cyrq – Lightning Dock Geothermal
Cleanout and Completion Program
LDG 55-7

Section C: Lithology



Section C: BOP Diagram



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 16, 2013

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal Water Quality Monitoring OrderNo.: 1312055

Dear David Janney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/2/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1312055**
Date Reported: **12/16/2013**

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001 **Matrix:** AQUEOUS **Received Date:** 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1221	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1232	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1242	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1248	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1254	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Aroclor 1260	ND	1.0		µg/L	1	12/8/2013 2:05:14 PM	10640
Surr: Decachlorobiphenyl	88.4	17-123		%REC	1	12/8/2013 2:05:14 PM	10640
Surr: Tetrachloro-m-xylene	74.0	22.6-113		%REC	1	12/8/2013 2:05:14 PM	10640
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/9/2013 7:15:48 PM	10641
1-Methylnaphthalene	ND	2.0		µg/L	1	12/9/2013 7:15:48 PM	10641
2-Methylnaphthalene	ND	2.0		µg/L	1	12/9/2013 7:15:48 PM	10641
Acenaphthylene	ND	2.5		µg/L	1	12/9/2013 7:15:48 PM	10641
Acenaphthene	ND	5.0		µg/L	1	12/9/2013 7:15:48 PM	10641
Fluorene	ND	0.80		µg/L	1	12/9/2013 7:15:48 PM	10641
Phenanthrene	0.65	0.60		µg/L	1	12/9/2013 7:15:48 PM	10641
Anthracene	ND	0.60		µg/L	1	12/9/2013 7:15:48 PM	10641
Fluoranthene	ND	0.30		µg/L	1	12/9/2013 7:15:48 PM	10641
Pyrene	0.71	0.30		µg/L	1	12/9/2013 7:15:48 PM	10641
Benz(a)anthracene	ND	0.070		µg/L	1	12/9/2013 7:15:48 PM	10641
Chrysene	ND	0.20		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(a)pyrene	ND	0.070		µg/L	1	12/9/2013 7:15:48 PM	10641
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/9/2013 7:15:48 PM	10641
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/9/2013 7:15:48 PM	10641
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/9/2013 7:15:48 PM	10641
Surr: Benzo(e)pyrene	64.1	24.5-139		%REC	1	12/9/2013 7:15:48 PM	10641
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	9.5	2.0	*	mg/L	20	12/3/2013 5:28:52 PM	R15216
Chloride	140	10		mg/L	20	12/3/2013 5:28:52 PM	R15216
Bromide	0.46	0.10		mg/L	1	12/3/2013 4:51:39 PM	R15216
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/3/2013 4:51:39 PM	R15216
Sulfate	630	10	*	mg/L	20	12/3/2013 5:28:52 PM	R15216
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/4/2013 10:52:14 PM	R15288
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.080	0.020		mg/L	1	12/3/2013 7:04:41 PM	R15213

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001 **Matrix:** AQUEOUS **Received Date:** 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Barium	0.094	0.0020		mg/L	1	12/3/2013 7:04:41 PM	R15213
Boron	0.65	0.040		mg/L	1	12/3/2013 7:04:41 PM	R15213
Cadmium	ND	0.0020		mg/L	1	12/3/2013 7:04:41 PM	R15213
Calcium	48	1.0		mg/L	1	12/3/2013 7:04:41 PM	R15213
Chromium	ND	0.0060		mg/L	1	12/3/2013 7:04:41 PM	R15213
Cobalt	ND	0.0060		mg/L	1	12/3/2013 7:04:41 PM	R15213
Copper	ND	0.0060		mg/L	1	12/3/2013 7:04:41 PM	R15213
Iron	0.40	0.020	*	mg/L	1	12/3/2013 7:04:41 PM	R15213
Magnesium	ND	1.0		mg/L	1	12/3/2013 7:04:41 PM	R15213
Manganese	0.13	0.0020	*	mg/L	1	12/3/2013 7:04:41 PM	R15213
Molybdenum	0.046	0.0080		mg/L	1	12/3/2013 7:04:41 PM	R15213
Nickel	ND	0.010		mg/L	1	12/3/2013 7:04:41 PM	R15213
Potassium	32	1.0		mg/L	1	12/3/2013 7:04:41 PM	R15213
Silver	ND	0.0050		mg/L	1	12/10/2013 11:43:56 AM	R15389
Sodium	380	5.0		mg/L	5	12/3/2013 7:06:37 PM	R15213
Zinc	ND	0.010		mg/L	1	12/3/2013 7:04:41 PM	R15213
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0074	0.0010		mg/L	1	12/9/2013 2:28:31 PM	R15360
Lead	ND	0.0010		mg/L	1	12/9/2013 12:53:57 PM	R15358
Selenium	0.0038	0.0010		mg/L	1	12/9/2013 2:28:31 PM	R15360
Uranium	ND	0.0010		mg/L	1	12/9/2013 12:53:57 PM	R15358
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/8/2013 5:08:28 PM	10693
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Acenaphthylene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Aniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Anthracene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Azobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benz(a)anthracene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(a)pyrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(b)fluoranthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzo(k)fluoranthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzoic acid	ND	40		µg/L	1	12/4/2013 12:59:42 PM	10639
Benzyl alcohol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639

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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

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Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001
Matrix: AQUEOUS
Received Date: 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Butyl benzyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Carbazole	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Chloroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Chloronaphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Chlorophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Chrysene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Di-n-butyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Di-n-octyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Dibenzofuran	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,2-Dichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,3-Dichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,4-Dichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Diethyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Dimethyl phthalate	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dichlorophenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dimethylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dinitrophenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4-Dinitrotoluene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,6-Dinitrotoluene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Fluoranthene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Fluorene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachlorobutadiene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Hexachloroethane	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Isophorone	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1-Methylnaphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Methylnaphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Methylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
3+4-Methylphenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639

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EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
N-Nitrosodimethylamine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Naphthalene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Nitroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
3-Nitroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Nitroaniline	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Nitrobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2-Nitrophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
4-Nitrophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Pentachlorophenol	ND	20		µg/L	1	12/4/2013 12:59:42 PM	10639
Phenanthrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Phenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Pyrene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Pyridine	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/4/2013 12:59:42 PM	10639
Surr: 2-Fluorophenol	48.5	22.7-98		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: Phenol-d5	38.2	23.4-74.9		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: 2,4,6-Tribromophenol	79.0	23.3-111		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: Nitrobenzene-d5	68.9	36.8-111		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: 2-Fluorobiphenyl	73.7	38.3-110		%REC	1	12/4/2013 12:59:42 PM	10639
Surr: 4-Terphenyl-d14	69.0	52.1-116		%REC	1	12/4/2013 12:59:42 PM	10639
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	1.8	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Toluene	3.4	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Ethylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Naphthalene	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1-Methylnaphthalene	ND	4.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Methylnaphthalene	ND	4.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Acetone	68	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Bromobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Bromodichloromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001
Matrix: AQUEOUS
Received Date: 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Bromomethane	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Butanone	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Carbon disulfide	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Carbon Tetrachloride	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chloroethane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chloroform	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Chloromethane	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Chlorotoluene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
4-Chlorotoluene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
cis-1,2-DCE	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Dibromochloromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Dibromomethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1-Dichloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1-Dichloroethene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2-Dichloropropane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,3-Dichloropropane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2,2-Dichloropropane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1-Dichloropropene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Hexachlorobutadiene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
2-Hexanone	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Isopropylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
4-Isopropyltoluene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
4-Methyl-2-pentanone	ND	10		µg/L	1	12/4/2013 6:48:43 PM	R15228
Methylene Chloride	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
n-Butylbenzene	ND	3.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
n-Propylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
sec-Butylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Styrene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
tert-Butylbenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: LDG 55-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/27/2013 3:00:00 PM
Lab ID: 1312055-001
Matrix: AQUEOUS
Received Date: 12/2/2013 3:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
trans-1,2-DCE	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Trichlorofluoromethane	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Vinyl chloride	ND	1.0		µg/L	1	12/4/2013 6:48:43 PM	R15228
Xylenes, Total	ND	1.5		µg/L	1	12/4/2013 6:48:43 PM	R15228
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
Surr: 4-Bromofluorobenzene	99.1	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
Surr: Dibromofluoromethane	102	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
Surr: Toluene-d8	100	70-130		%REC	1	12/4/2013 6:48:43 PM	R15228
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	12/3/2013	10616
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	25	2.5		µg/L	1	12/9/2013	10711
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2100	0.010		µmhos/cm	1	12/3/2013 7:58:15 PM	R15223
SM4500-H+B: PH						Analyst: **JML**	
pH	6.89	1.68	H	pH units	1	12/3/2013 7:58:15 PM	R15223
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	120	20		mg/L CaCO3	1	12/3/2013 7:58:15 PM	R15223
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/3/2013 7:58:15 PM	R15223
Total Alkalinity (as CaCO3)	120	20		mg/L CaCO3	1	12/3/2013 7:58:15 PM	R15223
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	842	40.0	*	mg/L	1	12/5/2013 4:51:00 PM	10626

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

Qualifiers:

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

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120140-001
Client Sample ID: 1312055-001H LDG 55-7

Report Date: 12/13/13
Collection Date: 11/27/13 15:00
DateReceived: 12/04/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.8	mg/L		0.1		E200.7	12/09/13 18:40 / eli-b
Rubidium	0.3	mg/L		0.1		E200.8	12/13/13 10:50 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:50 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120140-002
Client Sample ID: 1312055-001J LDG 55-7

Report Date: 12/13/13
Collection Date: 11/27/13 15:00
DateReceived: 12/04/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Phosphorus, Total as P	0.057	mg/L		0.005		E365.1	12/12/13 10:26 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 12/13/13
Work Order: C13120140

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: SUB-B216225	
Sample ID: ICV		Continuing Calibration Verification Standard							12/09/13 11:35	
Lithium		1.29	mg/L	0.10	103	95	105			
Sample ID: ICSA		Interference Check Sample A							12/09/13 11:47	
Lithium		-0.00206	mg/L	0.10						
Sample ID: ICSAB		Interference Check Sample AB							12/09/13 11:51	
Lithium		1.01	mg/L	0.10	101	80	120			
Method: E200.7									Batch: B_R216225	
Sample ID: MB-6500DIS131209A		Method Blank				Run: SUB-B216225			12/09/13 11:59	
Lithium		ND	mg/L	0.0003						
Sample ID: LFB-6500DIS131209A		Laboratory Fortified Blank				Run: SUB-B216225			12/09/13 12:03	
Lithium		1.00	mg/L	0.10	100	85	115			
Sample ID: B13120529-002BMS2		Sample Matrix Spike				Run: SUB-B216225			12/09/13 18:29	
Lithium		2.0	mg/L	0.10	100	70	130			
Sample ID: B13120529-002BMSD2		Sample Matrix Spike Duplicate				Run: SUB-B216225			12/09/13 18:33	
Lithium		2.0	mg/L	0.10	99	70	130	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13120140

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B216493	
Sample ID: QCS	2	Initial Calibration Verification Standard							12/13/13 09:32	
Rubidium		0.0533	mg/L	0.010	107	90	110			
Tungsten		0.0534	mg/L	0.10	107	90	110			
Method: E200.8									Batch: B_R216493	
Sample ID: LFB	2	Laboratory Fortified Blank				Run: SUB-B216493			12/13/13 09:34	
Rubidium		0.0476	mg/L	0.010	95	85	115			
Tungsten		0.0487	mg/L	0.10	97	85	115			
Sample ID: LRB	2	Method Blank				Run: SUB-B216493			12/13/13 09:56	
Rubidium		0.03								
Tungsten		1.0								
Sample ID: B13120270-001CMS	2	Sample Matrix Spike				Run: SUB-B216493			12/13/13 10:52	
Rubidium		0.713	mg/L	0.010		70	130			A
Tungsten		0.113	mg/L	0.10	120	70	130			
Sample ID: B13120270-001CMSD	2	Sample Matrix Spike Duplicate				Run: SUB-B216493			12/13/13 10:54	
Rubidium		0.715	mg/L	0.010		70	130	0.3	20	A
Tungsten		0.113	mg/L	0.10	120	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13120140

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E365.1										Analytical Run: SUB-B216417
Sample ID: ICV		Initial Calibration Verification Standard								12/12/13 09:56
Phosphorus, Total as P		0.258	mg/L	0.0050	103	90	110			
Method: E365.1										Batch: B_76392
Sample ID: MB-76392		Method Blank				Run: SUB-B216417				12/12/13 09:57
Phosphorus, Total as P		ND	mg/L	0.004						
Sample ID: LCS-76392		Laboratory Control Sample				Run: SUB-B216417				12/12/13 09:58
Phosphorus, Total as P		0.208	mg/L	0.0050	104	90	110			
Sample ID: B13120329-001BMS		Sample Matrix Spike				Run: SUB-B216417				12/12/13 10:11
Phosphorus, Total as P		0.255	mg/L	0.0050	104	90	110			
Sample ID: B13120329-001BMSD		Sample Matrix Spike Duplicate				Run: SUB-B216417				12/12/13 10:12
Phosphorus, Total as P		0.255	mg/L	0.0050	104	90	110	0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15213**	RunNo: **15213**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438573** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Sodium	ND	1.0								
[illegible]	ND	0.010								

ample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15213**	RunNo: **15213**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438574** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	111	85	115			
Barium	0.50	0.0020	0.5000	0	100	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.7	85	115			
Copper	0.49	0.0060	0.5000	0	97.8	85	115			
Iron	0.52	0.020	0.5000	0	104	85	115			
Magnesium	50	1.0	50.00	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.49	0.010	0.5000	0	99.0	85	115			
Potassium	49	1.0	50.00	0	98.4	85	115			
Sodium	49	1.0	50.00	0	98.6	85	115			
Zinc	0.50	0.010	0.5000	0	99.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15389**	RunNo: **15389**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15389**	RunNo: **15389**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443343** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.088	0.0050	0.1000	0	87.6	85	115			

Qualifiers:

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

OC SUMMARY REPORT

WO#: **1312055**

all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15358**	RunNo: **15358**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	96.9	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15358**	RunNo: **15358**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442394** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	97.3	85	115			
Uranium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15358**	RunNo: **15358**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442395** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	ND	0.0010								
,ium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15358**	RunNo: **15358**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442396** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15360**	RunNo: **15360**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			
Selenium	0.024	0.0010	0.02500	0	94.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15360**	RunNo: **15360**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442460** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15360**	RunNo: **15360**
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **442460** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

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

OC SUMMARY REPORT

ıll Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10693**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **10693**	RunNo: **15327**
Prep Date: **12/7/2013**	Analysis Date: **12/8/2013**	SeqNo: **441675** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-10693**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **10693**	RunNo: **15327**
Prep Date: **12/7/2013**	Analysis Date: **12/8/2013**	SeqNo: **441676** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312055

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1312055-001EMS** SampType: **MS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LDG 55-7** Batch ID: **R15216** RunNo: **15216**
Prep Date: Analysis Date: **12/3/2013** SeqNo: **438864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.9	0.10	2.500	0.4605	97.9	92	104			

Sample ID **1312055-001EMSD** SampType: **MSD** TestCode: **EPA Method 300.0: Anions**
Client ID: **LDG 55-7** Batch ID: **R15216** RunNo: **15216**
Prep Date: Analysis Date: **12/3/2013** SeqNo: **438865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.9	0.10	2.500	0.4605	97.0	92	104	0.787	20	

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15216** RunNo: **15216**
Prep Date: Analysis Date: **12/3/2013** SeqNo: **438867** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	2.400	0	100	90	110			
Chloride	12	0.50	12.00	0	102	90	110			
Bromide	12	0.10	12.00	0	102	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	99.8	90	110			
Sulfate	31	0.50	30.00	0	103	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15216** RunNo: **15216**
Prep Date: Analysis Date: **12/3/2013** SeqNo: **438879** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.96	0.10	1.000	0	96.1	90	110			
Chloride	4.7	0.50	5.000	0	93.3	90	110			
Bromide	4.9	0.10	5.000	0	97.8	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	90	110			
Sulfate	12	0.50	12.50	0	94.9	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15216** RunNo: **15216**
Prep Date: Analysis Date: **12/3/2013** SeqNo: **438891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	1.600	0	96.6	90	110			
Chloride	7.7	0.50	8.000	0	96.5	90	110			
Bromide	7.9	0.10	8.000	0	99.3	90	110			
Phosphorus, Orthophosphate (As P	7.6	0.50	8.000	0	95.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15216**	RunNo: **15216**							
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438891**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	97.9	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15216**	RunNo: **15216**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **438903**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.94	0.10	1.000	0	94.5	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Bromide	4.8	0.10	5.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	90	110			
Sulfate	12	0.50	12.50	0	94.3	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
ep Date:	Analysis Date: **12/4/2013**	SeqNo: **440664**	Units: **mg/L**						
alyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.4	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440676**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440688**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**							
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440700**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	99.9	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440711** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440712** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440713** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.5	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15288**	RunNo: **15288**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **440722** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10616**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10616**	RunNo: **15202**
Prep Date: **12/3/2013**	Analysis Date: **12/3/2013**	SeqNo: **438249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10616**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10616**	RunNo: **15202**
Prep Date: **12/3/2013**	Analysis Date: **12/3/2013**	SeqNo: **438250** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	92.4	80	120			

Sample ID **LCSD-10616**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10616**	RunNo: **15202**
Prep Date: **12/3/2013**	Analysis Date: **12/3/2013**	SeqNo: **438251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	91.2	80	120	1.31	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10640**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.4		2.500		97.6	17	123			
Surr: Tetrachloro-m-xylene	2.2		2.500		86.0	22.6	113			

Sample ID **LCS-10640**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.5	1.0	5.000	0	69.6	18.6	134			
Aroclor 1260	4.7	1.0	5.000	0	94.8	35.7	137			
Surr: Decachlorobiphenyl	2.2		2.500		88.0	17	123			
Surr: Tetrachloro-m-xylene	2.0		2.500		78.0	22.6	113			

Sample ID **1312055-001LMS**	SampType: **MS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LDG 55-7**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441776** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.7	1.0	5.000	0	74.4	70	130			
Aroclor 1260	3.0	1.0	5.000	0	60.6	61.1	129			S
Surr: Decachlorobiphenyl	1.9		2.500		77.6	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		66.0	22.6	113			

Sample ID **1312055-001LMSD**	SampType: **MSD**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LDG 55-7**	Batch ID: **10640**	RunNo: **15318**
Prep Date: **12/4/2013**	Analysis Date: **12/8/2013**	SeqNo: **441777** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.9	1.0	5.000	0	77.5	70	130	4.03	20	
Aroclor 1260	3.2	1.0	5.000	0	64.0	61.1	129	5.52	12.9	
Surr: Decachlorobiphenyl	2.1		2.500		83.2	17	123	0	0	
Surr: Tetrachloro-m-xylene	1.8		2.500		70.0	22.6	113	0	0	

Qualifiers:

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

QC SUMMARY REPORT

ll Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15195**	RunNo: **15195**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438387** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.8	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15195**	RunNo: **15195**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **438389** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		99.5	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439397** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439397** Units: **µg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439397** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130			
Surr: Toluene-d8	9.7		10.00		96.6	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15228**	RunNo: **15228**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439399** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	19	1.0	20.00	0	97.3	82.2	124			
Chlorobenzene	18	1.0	20.00	0	92.3	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	109	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	87.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.2	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10639**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10639**	RunNo: **15239**
Prep Date: **12/4/2013**	Analysis Date: **12/4/2013**	SeqNo: **439467** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

˙all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

˙lient: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10639**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10639**	RunNo: **15239**
Prep Date: **12/4/2013**	Analysis Date: **12/4/2013**	SeqNo: **439467** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
˙trosodiphenylamine	ND	10								
.ıthalene	ND	10								
.Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		59.1	22.7	98			
Surr: Phenol-d5	89		200.0		44.5	23.4	74.9			
Surr: 2,4,6-Tribromophenol	170		200.0		82.6	23.3	111			
Surr: Nitrobenzene-d5	76		100.0		76.5	36.8	111			
Surr: 2-Fluorobiphenyl	77		100.0		76.5	38.3	110			
Surr: 4-Terphenyl-d14	88		100.0		88.1	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcs-10639**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10639**	RunNo: **15239**
Prep Date: **12/4/2013**	Analysis Date: **12/4/2013**	SeqNo: **439468** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	88.2	48	101			
4-Chloro-3-methylphenol	170	10	200.0	0	84.2	47.9	109			
2-Chlorophenol	160	10	200.0	0	80.9	40	105			
1,4-Dichlorobenzene	77	10	100.0	0	77.2	40.8	94.3			
2,4-Dinitrotoluene	80	10	100.0	0	79.7	28.3	131			
N-Nitrosodi-n-propylamine	87	10	100.0	0	87.1	46.2	119			
4-Nitrophenol	86	10	200.0	0	42.9	10.5	67.9			
Pentachlorophenol	120	20	200.0	0	61.1	22.4	81.1			
Phenol	97	10	200.0	0	48.7	21.4	72.9			
Pyrene	79	10	100.0	0	79.4	46.9	109			
1,2,4-Trichlorobenzene	76	10	100.0	0	76.5	43.1	98.4			
Surr: 2-Fluorophenol	110		200.0		57.4	22.7	98			
Surr: Phenol-d5	96		200.0		47.8	23.4	74.9			
Surr: 2,4,6-Tribromophenol	180		200.0		90.0	23.3	111			
Surr: Nitrobenzene-d5	77		100.0		77.0	36.8	111			
Surr: 2-Fluorobiphenyl	80		100.0		79.7	38.3	110			
Surr: 4-Terphenyl-d14	92		100.0		91.9	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

WO#: 1312055

all Environmental Analysis Laboratory, Inc.

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS-10641** SampType: **LCS** TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW** Batch ID: **10641** RunNo: **15357**
Prep Date: **12/4/2013** Analysis Date: **12/9/2013** SeqNo: **442493** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	52	2.0	80.00	0	64.9	43.8	96.9			
1-Methylnaphthalene	37	2.0	80.20	0	46.1	41.3	87.3			
2-Methylnaphthalene	33	2.0	80.00	0	41.2	36.6	89.6			
Acenaphthylene	52	2.5	80.20	0	64.2	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.0	42.4	87.6			
Fluorene	4.0	0.80	8.020	0	49.6	40.5	93.6			
Phenanthrene	2.6	0.60	4.020	0	63.4	43.9	111			
Anthracene	2.6	0.60	4.020	0	64.4	44.3	103			
Fluoranthene	5.4	0.30	8.020	0	68.0	43.5	109			
Pyrene	5.2	0.30	8.020	0	64.5	32.6	103			
Benz(a)anthracene	0.48	0.070	0.8020	0	59.9	43	114			
Chrysene	2.4	0.20	4.020	0	59.7	40.2	100			
Benzo(b)fluoranthene	0.65	0.10	1.002	0	64.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			
Benzo(a)pyrene	0.29	0.070	0.5020	0	57.8	34.5	118			
Dibenz(a,h)anthracene	0.62	0.12	1.002	0	61.9	38.3	107			
zo(g,h,i)perylene	0.54	0.12	1.000	0	54.0	38.4	110			
no(1,2,3-cd)pyrene	1.4	0.25	2.004	0	72.4	42.4	113			
Surr: Benzo(e)pyrene	24		20.00		121	24.5	139			

Sample ID **MB-10641** SampType: **MBLK** TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW** Batch ID: **10641** RunNo: **15357**
Prep Date: **12/4/2013** Analysis Date: **12/9/2013** SeqNo: **442494** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10641** SampType: **MBLK** TestCode: **EPA Method 8310: PAHs**

Client ID: **PBW** Batch ID: **10641** RunNo: **15357**

Prep Date: **12/4/2013** Analysis Date: **12/9/2013** SeqNo: **442494** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	17		20.00		86.4	24.5	139			

Sample ID **1312055-001CMS** SampType: **MS** TestCode: **EPA Method 8310: PAHs**

Client ID: **LDG 55-7** Batch ID: **10641** RunNo: **15357**

Prep Date: **12/4/2013** Analysis Date: **12/9/2013** SeqNo: **442956** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	1.140	52.4	70	130			S
1-Methylnaphthalene	31	2.0	80.20	0	38.1	70	130			S
2-Methylnaphthalene	28	2.0	80.00	0	35.6	70	130			S
Acenaphthylene	65	2.5	80.20	10.28	68.8	70	130			S
Acenaphthene	30	5.0	80.00	0	37.4	70	130			S
Fluorene	3.5	0.80	8.020	0	43.4	70	130			S
Phenanthrene	2.8	0.60	4.020	0.6500	53.7	70	130			S
Anthracene	2.1	0.60	4.020	0	53.0	70	130			S
Fluoranthene	4.3	0.30	8.020	0	53.6	70	130			S
Pyrene	4.4	0.30	8.020	0.7100	46.5	70	130			S
Benz(a)anthracene	0.39	0.070	0.8020	0	48.6	70	130			S
Chrysene	2.0	0.20	4.020	0.08000	46.8	70	130			S
Benzo(b)fluoranthene	0.48	0.10	1.002	0	47.9	70	130			S
Benzo(k)fluoranthene	0.22	0.070	0.5000	0	44.0	70	130			S
Benzo(a)pyrene	0.24	0.070	0.5020	0	47.8	70	130			S
Dibenz(a,h)anthracene	0.50	0.12	1.002	0	49.9	70	130			S
Benzo(g,h,i)perylene	0.90	0.12	1.000	0.4400	46.0	70	130			S
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0.1000	52.4	70	130			S
Surr: Benzo(e)pyrene	13		20.00		67.2	24.5	139			

Sample ID **1312055-001CMSD** SampType: **MSD** TestCode: **EPA Method 8310: PAHs**

Client ID: **LDG 55-7** Batch ID: **10641** RunNo: **15357**

Prep Date: **12/4/2013** Analysis Date: **12/9/2013** SeqNo: **442957** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	46	2.0	80.00	1.140	56.3	70	130	7.02	20	S
1-Methylnaphthalene	32	2.0	80.20	0	39.3	70	130	3.13	20	S
2-Methylnaphthalene	28	2.0	80.00	0	35.5	70	130	0.457	20	S
Acenaphthylene	72	2.5	80.20	10.28	77.3	70	130	9.95	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1312055-001CMSD**	SampType: **MSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LDG 55-7**	Batch ID: **10641**	RunNo: **15357**
Prep Date: **12/4/2013**	Analysis Date: **12/9/2013**	SeqNo: **442957** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	31	5.0	80.00	0	38.3	70	130	2.18	20	S
Fluorene	3.6	0.80	8.020	0	45.3	70	130	4.22	20	S
Phenanthrene	3.0	0.60	4.020	0.6500	57.2	70	130	4.86	20	S
Anthracene	2.2	0.60	4.020	0	55.7	70	130	5.03	20	S
Fluoranthene	4.5	0.30	8.020	0	55.7	70	130	3.88	20	S
Pyrene	4.7	0.30	8.020	0.7100	49.3	70	130	4.84	20	S
Benz(a)anthracene	0.42	0.070	0.8020	0	52.4	70	130	7.41	20	S
Chrysene	2.1	0.20	4.020	0.08000	50.5	70	130	7.37	20	S
Benzo(b)fluoranthene	0.52	0.10	1.002	0	51.9	70	130	8.00	20	S
Benzo(k)fluoranthene	0.25	0.070	0.5000	0	50.0	70	130	12.8	20	S
Benzo(a)pyrene	0.27	0.070	0.5020	0	53.8	70	130	11.8	20	S
Dibenz(a,h)anthracene	0.54	0.12	1.002	0	53.9	70	130	7.69	20	S
Benzo(g,h,i)perylene	1.2	0.12	1.000	0.4400	71.0	70	130	24.4	20	R
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0.1000	57.4	70	130	8.33	20	S
Surr: Benzo(e)pyrene	14		20.00		72.4	24.5	139	0		

Qualifiers:

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

Analyte detected below quantitation limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10711**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10711**	RunNo: **15336**
Prep Date: **12/9/2013**	Analysis Date: **12/9/2013**	SeqNo: **441860** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10711**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10711**	RunNo: **15336**
Prep Date: **12/9/2013**	Analysis Date: **12/9/2013**	SeqNo: **441861** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	74.1	125			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-2**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R15223**	RunNo: **15223**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **439031** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-2**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R15223**	RunNo: **15223**
Prep Date:	Analysis Date: **12/3/2013**	SeqNo: **439032** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312055**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10626**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10626**	RunNo: **15274**
Prep Date: **12/3/2013**	Analysis Date: **12/5/2013**	SeqNo: **440340** 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-10626**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10626**	RunNo: **15274**
Prep Date: **12/3/2013**	Analysis Date: **12/5/2013**	SeqNo: **440341** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312055 | RcptNo: 1

Received by/date: AT 12/02/13

Logged By: Anne Thorne 12/2/2013 3:20:00 PM Anne Thorne

Completed By: Anne Thorne 12/3/2013 Anne Thorne

Reviewed By: AT 12/03/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ✔	No	
7. Sufficient sample volume for indicated test(s)?	Yes ✔	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes	No ✔	
9. Was preservative added to bottles?	Yes ✔	No	NA
10. VOA vials have zero headspace?	Yes ☐	No ☐	HNO3, HNO3 No VOA Vials ✔
11. Were any sample containers received broken?	Yes	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No	# of preserved bottles checked for pH: 7 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	Adjusted?
14. Is it clear what analyses were requested?	Yes ✔	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes	No ✔	Checked by: AT 12/03/13

Special Handling (if applicable)

16. 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:

17. Additional remarks:

SAMPLE POURED OFF FOR RADON ANALYSIS-(RADON OUT OF HOLD) DISSOLVED METALS SAMPLE POURED OFF, FILTERED AND PRESERVED IN LAB/at 12/3/13

18. Cooler Information

Radon Sample broke during shipment to Sub lab; unable to analyze for Radon AT 12/04/13

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: AMEC Work Order Number: **1312055** RcptNo: **1**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Not Present			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: AMEC Environment & Infrastructure, Inc

Mailing Address: 8519 Jefferson St NE ABQ, NM 87113

Phone #: (505) 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation: ☐ NELAP ☐ Other ______

☒ EDD (Type) Excel

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: ~~Lightning Dock~~ Lightning Dock Geothermal water quality monitoring

Project #: 11-517-00102.05

Project Manager: David Janney

Sampler: Eric Koenig

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.1

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1312055	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals Plus Br, Li, Ru, W	U (6010B/6020)	RA	Phenols	Air Bubbles (Y or N)
~~11/24/13~~			~~MW-1B~~							~~X~~		~~X~~		~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
11/27/13	1500	Water	LDG 55-7	11		-001				X	X	X		X	X	X	X	X	X	X	X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/2/13	15:20	Eric D. Koenig	[signature]	12/02/13	1520

Remarks: Metals Not Filtered or Preserved. See Attached for full analytes list. Please generate a separate report for this sample. Per DJ invoice CYR @ Env. 12/03

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

January 22, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock CYRQ ENERGY OrderNo.: 1312666

Dear David Janney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/16/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312666**
Date Reported: **1/22/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/16/2013 9:59:38 PM	10822
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1221	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1232	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1242	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1248	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1254	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Aroclor 1260	ND	1.0		µg/L	1	12/18/2013 5:01:00 AM	10796
Surr: Decachlorobiphenyl	86.0	17-123		%REC	1	12/18/2013 5:01:00 AM	10796
Surr: Tetrachloro-m-xylene	66.4	22.6-113		%REC	1	12/18/2013 5:01:00 AM	10796
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/17/2013 10:29:26 PM	10797
1-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:29:26 PM	10797
2-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:29:26 PM	10797
Acenaphthylene	ND	2.5		µg/L	1	12/17/2013 10:29:26 PM	10797
Acenaphthene	ND	5.0		µg/L	1	12/17/2013 10:29:26 PM	10797
Fluorene	ND	0.80		µg/L	1	12/17/2013 10:29:26 PM	10797
Phenanthrene	ND	0.60		µg/L	1	12/17/2013 10:29:26 PM	10797
Anthracene	ND	0.60		µg/L	1	12/17/2013 10:29:26 PM	10797
Fluoranthene	ND	0.30		µg/L	1	12/17/2013 10:29:26 PM	10797
Pyrene	ND	0.30		µg/L	1	12/17/2013 10:29:26 PM	10797
Benz(a)anthracene	ND	0.070		µg/L	1	12/17/2013 10:29:26 PM	10797
Chrysene	ND	0.20		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(a)pyrene	ND	0.070		µg/L	1	12/17/2013 10:29:26 PM	10797
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/17/2013 10:29:26 PM	10797
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/17/2013 10:29:26 PM	10797
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/17/2013 10:29:26 PM	10797
Surr: Benzo(e)pyrene	42.4	24.5-139		%REC	1	12/17/2013 10:29:26 PM	10797
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	1.4	0.10		mg/L	1	12/16/2013 10:09:50 PM	R15551
Chloride	33	10		mg/L	20	12/16/2013 10:22:15 PM	R15551
Phosphorus, Orthophosphate (As P	ND	0.50	H	mg/L	1	12/16/2013 10:09:50 PM	R15551
Sulfate	120	10		mg/L	20	12/16/2013 10:22:15 PM	R15551
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/17/2013 4:59:32 AM	R15551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	ND	0.020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Barium	0.038	0.0020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Boron	0.12	0.040		mg/L	1	12/19/2013 5:40:30 PM	R15612
Cadmium	ND	0.0020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Calcium	26	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Chromium	ND	0.0060		mg/L	1	12/19/2013 5:40:30 PM	R15612
Cobalt	ND	0.0060		mg/L	1	12/19/2013 5:40:30 PM	R15612
Copper	ND	0.0060		mg/L	1	12/19/2013 5:40:30 PM	R15612
Iron	ND	0.020		mg/L	1	12/19/2013 5:40:30 PM	R15612
Magnesium	1.9	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Manganese	0.067	0.0020	*	mg/L	1	12/19/2013 5:40:30 PM	R15612
Molybdenum	ND	0.0080		mg/L	1	12/19/2013 5:40:30 PM	R15612
Nickel	ND	0.010		mg/L	1	12/19/2013 5:40:30 PM	R15612
Potassium	3.9	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Silver	ND	0.0050		mg/L	1	12/19/2013 5:40:30 PM	R15612
Sodium	72	1.0		mg/L	1	12/19/2013 5:40:30 PM	R15612
Zinc	0.049	0.010		mg/L	1	12/19/2013 5:40:30 PM	R15612
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	ND	0.0010		mg/L	1	1/6/2014 5:09:54 PM	R15909
Lead	ND	0.0010		mg/L	1	1/6/2014 5:09:54 PM	R15909
Uranium	ND	0.0010		mg/L	1	1/7/2014 6:07:19 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **IDC**	
Mercury	ND	0.00020		mg/L	1	1/3/2014 3:52:08 PM	11064
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Acenaphthylene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Aniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Anthracene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Azobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benz(a)anthracene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(a)pyrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzoic acid	ND	40		µg/L	1	12/18/2013 10:03:31 AM	10800
Benzyl alcohol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Carbazole	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Chloroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Chloronaphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Chlorophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Chrysene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Dibenzofuran	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Diethyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Dimethyl phthalate	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dichlorophenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Fluoranthene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Fluorene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachlorobutadiene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Hexachloroethane	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Isophorone	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Methylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
3+4-Methylphenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800

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

Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
N-Nitrosodimethylamine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Naphthalene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Nitroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
3-Nitroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Nitroaniline	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Nitrobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2-Nitrophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
4-Nitrophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Pentachlorophenol	ND	20		µg/L	1	12/18/2013 10:03:31 AM	10800
Phenanthrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Phenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Pyrene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Pyridine	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/2013 10:03:31 AM	10800
Surr: 2-Fluorophenol	49.9	22.7-98		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: Phenol-d5	40.5	23.4-74.9		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: 2,4,6-Tribromophenol	90.1	23.3-111		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: Nitrobenzene-d5	80.1	36.8-111		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: 2-Fluorobiphenyl	95.9	38.3-110		%REC	1	12/18/2013 10:03:31 AM	10800
Surr: 4-Terphenyl-d14	91.6	52.1-116		%REC	1	12/18/2013 10:03:31 AM	10800
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Toluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Ethylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Naphthalene	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1-Methylnaphthalene	ND	4.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Methylnaphthalene	ND	4.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Acetone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Bromobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Bromodichloromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Bromoform	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Bromomethane	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Butanone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Carbon disulfide	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Carbon Tetrachloride	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chloroethane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chloroform	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Chloromethane	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Chlorotoluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
4-Chlorotoluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
cis-1,2-DCE	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Dibromochloromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Dibromomethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1-Dichloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1-Dichloroethene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2-Dichloropropane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,3-Dichloropropane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2,2-Dichloropropane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1-Dichloropropene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Hexachlorobutadiene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
2-Hexanone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Isopropylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
4-Isopropyltoluene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
4-Methyl-2-pentanone	ND	10		µg/L	1	12/16/2013 5:06:55 PM	R15529
Methylene Chloride	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
n-Butylbenzene	ND	3.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
n-Propylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
sec-Butylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Styrene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
tert-Butylbenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: 53-7
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/13/2013 2:00:00 PM
Lab ID: 1312666-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:03:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
trans-1,2-DCE	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Trichlorofluoromethane	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Vinyl chloride	ND	1.0		µg/L	1	12/16/2013 5:06:55 PM	R15529
Xylenes, Total	ND	1.5		µg/L	1	12/16/2013 5:06:55 PM	R15529
Surr: 1,2-Dichloroethane-d4	90.1	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
Surr: 4-Bromofluorobenzene	97.4	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
Surr: Dibromofluoromethane	91.6	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
Surr: Toluene-d8	93.2	70-130		%REC	1	12/16/2013 5:06:55 PM	R15529
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	12/17/2013	10820
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	7.6	2.5		µg/L	1	12/19/2013	10891
SM4500-H+B: PH						Analyst: **SRM**	
pH	7.53	1.68	H	pH units	1	12/16/2013 6:15:25 PM	R15528
SM2320B: ALKALINITY						Analyst: **SRM**	
Bicarbonate (As CaCO3)	53	20		mg/L CaCO3	1	12/16/2013 6:15:25 PM	R15528
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/16/2013 6:15:25 PM	R15528
Total Alkalinity (as CaCO3)	53	20		mg/L CaCO3	1	12/16/2013 6:15:25 PM	R15528
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	321	20.0		mg/L	1	12/19/2013 8:53:00 PM	10881

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218047
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1312666
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218047-001	**Sampling Date**	12/13/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312666-001K / 53-7	**Sampling Time**	2:00 PM		
Matrix	Water				
Comments	Metals samples received unfiltered and preserved with HNO3.				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Lithium	0.0887	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Rubidium	0.0127	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Tungsten	ND	mg/L	0.01	1/21/2014	ETL	EPA 200.8	

Sample Number	131218047-002	**Sampling Date**	12/13/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312666-001L / 53-7	**Sampling Time**	2:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218047
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312666
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218047-003	**Sampling Date**	12/13/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312666-001M / 53-7	**Sampling Time**	2:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	0.0131	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120621-001
Client Sample ID: 1312666-001O 53-7

Report Date: 12/23/13
Collection Date: 12/13/13 14:00
DateReceived: 12/18/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Radon 222	-67.8	pCi/L	U			D5072-92	12/18/13 18:01 / dpb
Radon 222 precision (±)	74.1	pCi/L				D5072-92	12/18/13 18:01 / dpb
Radon 222 MDC	130	pCi/L				D5072-92	12/18/13 18:01 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/23/13
Project: Not Indicated
Work Order: C13120621

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92										Batch: R181914
Sample ID: C13120621-001ADUP	3	Sample Duplicate				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		1.6	pCi/L					210	20	UR
Radon 222 precision (±)		75.1	pCi/L							
Radon 222 MDC		130	pCi/L							
- The Sample and the Duplicate are both below the MDC. The RPD is acceptable.										
Sample ID: MB-R181914	3	Method Blank				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		7	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R181914		Laboratory Control Sample				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		552	pCi/L		96	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312666
Pace Project No.: 30109791

Sample: 1312666-001 53-7 **Lab ID: 30109791001** Collected: 12/13/13 14:00 Received: 12/17/13 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.166 ± 0.380 (0.225)**	pCi/L	12/23/13 12:34	13982-63-3	
Radium-228	EPA 904.0	**0.414 ± 0.460 (0.931)**	pCi/L	01/02/14 16:27	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312666
Pace Project No.: 30109791

QC Batch: RADC/18124
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30109791001

METHOD BLANK: 671631
Matrix: Water
Associated Lab Samples: 30109791001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.536 ± 0.648 (0.960)	pCi/L	12/23/13 10:50	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312666
Pace Project No.: 30109791

QC Batch: RADC/18128
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30109791001

METHOD BLANK: 671635
Matrix: Water
Associated Lab Samples: 30109791001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.134 ± 0.301 (0.670)	pCi/L	01/02/14 13:25	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449740** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
ium	ND	1.0								
	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449741** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	109	85	115			
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	49	1.0	50.00	0	97.2	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.4	85	115			
Copper	0.48	0.0060	0.5000	0	96.7	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Magnesium	49	1.0	50.00	0	98.0	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Potassium	48	1.0	50.00	0	95.1	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	48	1.0	50.00	0	95.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449741** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.027	0.0010	0.02500	0	106	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.4	85	115			
Lead	0.026	0.0010	0.02500	0	105	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
nic	ND	0.0010								
d	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.027	0.0010	0.02500	0	109	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-11064**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **11064**	RunNo: **15897**
Prep Date: **1/3/2014**	Analysis Date: **1/3/2014**	SeqNo: **458393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-11064**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **11064**	RunNo: **15897**
Prep Date: **1/3/2014**	Analysis Date: **1/3/2014**	SeqNo: **458394** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.9	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447258** 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								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.7	90	110			
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.4	90	110			
Sulfate	9.5	0.50	10.00	0	95.4	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.2	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447268** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.97	0.10	1.000	0	97.2	90	110			
Chloride	4.6	0.50	5.000	0	92.6	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.4	90	110			
Sulfate	12	0.50	12.50	0	93.9	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447280** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	97.6	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.2	90	110			
Sulfate	20	0.50	20.00	0	98.5	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447292** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	2.400	0	98.4	90	110			
Chloride	12	0.50	12.00	0	101	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	100	90	110			
Sulfate	31	0.50	30.00	0	102	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/17/2013**	SeqNo: **447304** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.94	0.10	1.000	0	93.6	90	110			
Chloride	4.6	0.50	5.000	0	92.5	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
···rate+Nitrite as N	4.8	0.20	5.000	0	95.4	90	110			

ample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/17/2013**	SeqNo: **447316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	96.9	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.3	90	110			
Sulfate	20	0.50	20.00	0	98.1	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/17/2013**	SeqNo: **447327** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.95	0.10	1.000	0	95.2	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10820**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447701** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10820**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.0	1.0	5.000	0	99.8	80	120			

Sample ID **LCSD-10820**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.7	1.0	5.000	0	94.8	80	120	5.14	20	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10822**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447079** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10822**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447080** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	113	70	130			

Sample ID **LCSD-10822**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447081** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	108	70	130	4.52	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10796**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447133** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.2	17	123			
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	22.6	113			

Sample ID **LCS-10796**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447135** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
Aroclor 1260	3.8	1.0	5.000	0	75.7	35.7	137			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		64.4	22.6	113			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
nomethane	ND	3.0								
utanone	ND	10								
arbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.4	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.9	70	130			

Sample ID **100ng lcs200ng aca**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	20	1.0	20.00	0	102	82.2	124			
Chlorobenzene	20	1.0	20.00	0	99.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **100ng lcs200ng aca**	SampType: **LCS**			TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R15529**			RunNo: **15529**						
Prep Date:	Analysis Date: **12/16/2013**			SeqNo: **446646**		Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	9.0		10.00		90.3	70	130			
Surr: Toluene-d8	9.4		10.00		94.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**	
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
'rosodimethylamine	ND	10								
trosodiphenylamine	ND	10								
ıphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	90		200.0		45.2	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	64		100.0		64.0	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		68.2	38.3	110			
Surr: 4-Terphenyl-d14	75		100.0		74.7	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **lcs-10800**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446855** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	89.4	48	101			
4-Chloro-3-methylphenol	190	10	200.0	0	94.8	47.9	109			
2-Chlorophenol	180	10	200.0	0	92.5	40	105			
1,4-Dichlorobenzene	96	10	100.0	0	96.4	40.8	94.3			S
2,4-Dinitrotoluene	87	10	100.0	0	86.8	28.3	131			
N-Nitrosodi-n-propylamine	100	10	100.0	0	101	46.2	119			
4-Nitrophenol	88	10	200.0	0	43.8	10.5	67.9			
Pentachlorophenol	130	20	200.0	0	65.2	22.4	81.1			
Phenol	110	10	200.0	0	54.2	21.4	72.9			
Pyrene	83	10	100.0	0	83.0	46.9	109			
1,2,4-Trichlorobenzene	93	10	100.0	0	93.3	43.1	98.4			
Surr: 2-Fluorophenol	120		200.0		59.7	22.7	98			
Surr: Phenol-d5	110		200.0		53.4	23.4	74.9			
Surr: 2,4,6-Tribromophenol	180		200.0		91.9	23.3	111			
Surr: Nitrobenzene-d5	81		100.0		81.5	36.8	111			
Surr: 2-Fluorobiphenyl	85		100.0		84.8	38.3	110			
Surr: 4-Terphenyl-d14	88		100.0		87.8	52.1	116			

Sample ID **lcsd-10800**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446856** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	90	10	100.0	0	89.9	48	101	0.558	25	
4-Chloro-3-methylphenol	180	10	200.0	0	92.1	47.9	109	2.84	32.7	
2-Chlorophenol	170	10	200.0	0	83.9	40	105	9.78	20	
1,4-Dichlorobenzene	83	10	100.0	0	82.6	40.8	94.3	15.4	20	
2,4-Dinitrotoluene	81	10	100.0	0	80.8	28.3	131	7.11	29.9	
N-Nitrosodi-n-propylamine	90	10	100.0	0	90.4	46.2	119	10.9	23.1	
4-Nitrophenol	78	10	200.0	0	39.0	10.5	67.9	11.6	40.5	
Pentachlorophenol	110	20	200.0	0	54.5	22.4	81.1	17.8	37.3	
Phenol	92	10	200.0	0	46.2	21.4	72.9	15.9	20	
Pyrene	83	10	100.0	0	83.1	46.9	109	0.193	26.5	
1,2,4-Trichlorobenzene	84	10	100.0	0	83.8	43.1	98.4	10.7	27.2	
Surr: 2-Fluorophenol	110		200.0		55.0	22.7	98	0	0	
Surr: Phenol-d5	93		200.0		46.5	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		79.0	23.3	111	0	0	
Surr: Nitrobenzene-d5	81		100.0		80.8	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	83		100.0		82.9	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID	**lcsd-10800**	SampType:	**LCSD**		TestCode:	**EPA Method 8270C: Semivolatiles**				
Client ID:	**LCSS02**	Batch ID:	**10800**		RunNo:	**15530**				
Prep Date:	**12/16/2013**	Analysis Date:	**12/16/2013**		SeqNo:	**446856**	Units:	**µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	83		100.0		82.9	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10797**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447054** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	21		20.00		104	24.5	139			

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	41	2.0	80.00	0	51.6	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	44.8	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	42.0	36.6	89.6			
Acenaphthylene	46	2.5	80.20	0	57.7	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.1	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.2	0.60	4.020	0	53.7	43.9	111			
Anthracene	2.2	0.60	4.020	0	56.0	44.3	103			
Fluoranthene	4.6	0.30	8.020	0	57.5	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.7	32.6	103			
Benz(a)anthracene	0.46	0.070	0.8020	0	57.4	43	114			
Chrysene	2.2	0.20	4.020	0	54.0	40.2	100			
Benzo(b)fluoranthene	0.57	0.10	1.002	0	56.9	44.4	118			
Benzo(k)fluoranthene	0.29	0.070	0.5000	0	58.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.28	0.070	0.5020	0	55.8	34.5	118			
Dibenz(a,h)anthracene	0.59	0.12	1.002	0	58.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	64.4	42.4	113			
Surr: Benzo(e)pyrene	15		20.00		74.8	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10891**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449210** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10891**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449211** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	103	73.7	135			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-1**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446604**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446605**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.4	90	110			

Sample ID **mb-2**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446624**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

mple ID **lcs-2**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
ient ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446625**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312666**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10881**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10881**	RunNo: **15624**
Prep Date: **12/18/2013**	Analysis Date: **12/19/2013**	SeqNo: **450504** 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-10881**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10881**	RunNo: **15624**
Prep Date: **12/18/2013**	Analysis Date: **12/19/2013**	SeqNo: **450505** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312666 | RcptNo: 1

Received by/date: ICS 12/16/13

Logged By: Anne Thorne 12/16/2013 9:03:00 AM

Completed By: Anne Thorne 12/16/2013

Reviewed By: AT 12/16/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

AT 12/16/13

# of preserved bottles checked for pH: 8 (<2 or >12 unless noted)

Adjusted?

Checked by: AT 12/16/13

Special Handling (if applicable)

16. 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:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			

Chain-of-Custody Record

Client: AMEC E+I, INC

Mailing Address: 8519 Jefferson
ALBUQUERQUE, NM 87114

Phone #: 505-821-1801

email or Fax#: David.Janney@AMEC.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: Lightning Dock/Cyrq Energy

Project #: 11-517-000102

Project Manager: David Janney

Sampler: JC + ER

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.9

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. 1312066	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12-13-13	14:00	H_2O	53-7			-001																

Date:	Time:	Relinquished by:	Received by:	Date	Time
12-16-13	0905			12/16/13	9:03
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: SEE ATTACHED ANALYTES LIST.

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

January 14, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal GW Quality Monitoring OrderNo.: 1312A59

Dear David Janney:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/21/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312A59**
Date Reported: **1/14/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 2:31:48 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 2:42:39 AM	10979
Surr: Decachlorobiphenyl	93.6	17-123		%REC	1	12/30/2013 2:42:39 AM	10979
Surr: Tetrachloro-m-xylene	98.0	22.6-113		%REC	1	12/30/2013 2:42:39 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	100		µg/L	50	12/28/2013 3:37:14 AM	10981
1-Methylnaphthalene	ND	100		µg/L	50	12/28/2013 3:37:14 AM	10981
2-Methylnaphthalene	ND	100		µg/L	50	12/28/2013 3:37:14 AM	10981
Acenaphthylene	ND	120		µg/L	50	12/28/2013 3:37:14 AM	10981
Acenaphthene	ND	250		µg/L	50	12/28/2013 3:37:14 AM	10981
Fluorene	ND	40		µg/L	50	12/28/2013 3:37:14 AM	10981
Phenanthrene	ND	30		µg/L	50	12/28/2013 3:37:14 AM	10981
Anthracene	ND	30		µg/L	50	12/28/2013 3:37:14 AM	10981
Fluoranthene	ND	15		µg/L	50	12/28/2013 3:37:14 AM	10981
Pyrene	ND	15		µg/L	50	12/28/2013 3:37:14 AM	10981
Benz(a)anthracene	ND	3.5		µg/L	50	12/28/2013 3:37:14 AM	10981
Chrysene	ND	10		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(b)fluoranthene	ND	5.0		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(k)fluoranthene	ND	3.5		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(a)pyrene	ND	3.5		µg/L	50	12/28/2013 3:37:14 AM	10981
Dibenz(a,h)anthracene	ND	6.2		µg/L	50	12/28/2013 3:37:14 AM	10981
Benzo(g,h,i)perylene	ND	6.2		µg/L	50	12/28/2013 3:37:14 AM	10981
Indeno(1,2,3-cd)pyrene	ND	12		µg/L	50	12/28/2013 3:37:14 AM	10981
Surr: Benzo(e)pyrene	113	24.5-139		%REC	50	12/28/2013 3:37:14 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	14	0.50	*	mg/L	5	12/24/2013 3:52:17 PM	R15742
Chloride	97	2.5		mg/L	5	12/23/2013 9:15:25 PM	R15706
Bromide	ND	0.50		mg/L	5	12/23/2013 9:15:25 PM	R15706
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/24/2013 3:52:17 PM	R15742
Sulfate	540	10	*	mg/L	20	12/23/2013 9:27:49 PM	R15706
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/23/2013 11:31:56 PM	R15706

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.21	0.020	*	mg/L	1	12/23/2013 6:00:22 PM	R15707
Barium	0.065	0.0020		mg/L	1	12/23/2013 6:00:22 PM	R15707
Boron	0.46	0.040		mg/L	1	12/23/2013 6:00:22 PM	R15707
Cadmium	ND	0.0020		mg/L	1	12/23/2013 6:00:22 PM	R15707
Calcium	23	1.0		mg/L	1	12/30/2013 12:25:16 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/23/2013 6:00:22 PM	R15707
Copper	ND	0.0060		mg/L	1	12/27/2013 2:35:33 PM	R15768
Iron	ND	0.020		mg/L	1	12/30/2013 12:25:16 PM	R15805
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:25:16 PM	R15805
Manganese	0.018	0.0020		mg/L	1	12/23/2013 6:00:22 PM	R15707
Molybdenum	0.026	0.0080		mg/L	1	12/23/2013 6:00:22 PM	R15707
Nickel	ND	0.010		mg/L	1	12/27/2013 2:35:33 PM	R15768
Potassium	30	1.0		mg/L	1	12/30/2013 12:25:16 PM	R15805
Silver	ND	0.0050		mg/L	1	12/23/2013 6:00:22 PM	R15707
Sodium	300	5.0		mg/L	5	12/30/2013 12:27:09 PM	R15805
Zinc	ND	0.010		mg/L	1	12/27/2013 2:35:33 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.012	0.0010	*	mg/L	1	1/7/2014 2:57:12 PM	R15933
Lead	ND	0.0010		mg/L	1	1/7/2014 2:57:12 PM	R15933
Selenium	0.0017	0.0010		mg/L	1	1/7/2014 2:57:12 PM	R15933
Uranium	ND	0.0010		mg/L	1	1/7/2014 6:09:59 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:11:45 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzoic acid	ND	40		µg/L	1	12/26/2013 10:13:19 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980

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Lab ID: 1312A59-001
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 10:13:19 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Phenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:13:19 PM	10980
Surr: 2-Fluorophenol	58.0	22.7-98		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: Phenol-d5	43.6	23.4-74.9		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: 2,4,6-Tribromophenol	86.2	23.3-111		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: Nitrobenzene-d5	83.6	36.8-111		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: 2-Fluorobiphenyl	102	38.3-110		%REC	1	12/26/2013 10:13:19 PM	10980
Surr: 4-Terphenyl-d14	90.8	52.1-116		%REC	1	12/26/2013 10:13:19 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Toluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Naphthalene	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Acetone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Butanone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,3-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/29/2013 8:16:13 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Styrene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 45-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/19/2013 11:00:00 AM
Lab ID: 1312A59-001 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/29/2013 8:16:13 PM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/29/2013 8:16:13 PM	R15774
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
Surr: Dibromofluoromethane	106	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
Surr: Toluene-d8	97.4	70-130		%REC	1	12/29/2013 8:16:13 PM	R15774
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	52	1.1		mg/L	1	12/24/2013	10974
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	1/8/2014	11134
SM4500-H+B: PH						Analyst: **SRM**	
pH	6.82	1.68	H	pH units	1	12/23/2013 7:06:45 PM	R15709
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	110	20		mg/L CaCO3	1	12/26/2013 1:03:39 PM	R15744
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/26/2013 1:03:39 PM	R15744
Total Alkalinity (as CaCO3)	110	20		mg/L CaCO3	1	12/26/2013 1:03:39 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1270	40.0	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 2:45:40 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 3:28:36 AM	10979
Surr: Decachlorobiphenyl	74.4	17-123		%REC	1	12/30/2013 3:28:36 AM	10979
Surr: Tetrachloro-m-xylene	66.0	22.6-113		%REC	1	12/30/2013 3:28:36 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/28/2013 4:06:32 AM	10981
1-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:06:32 AM	10981
2-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:06:32 AM	10981
Acenaphthylene	ND	2.5		µg/L	1	12/28/2013 4:06:32 AM	10981
Acenaphthene	ND	5.0		µg/L	1	12/28/2013 4:06:32 AM	10981
Fluorene	ND	0.80		µg/L	1	12/28/2013 4:06:32 AM	10981
Phenanthrene	ND	0.60		µg/L	1	12/28/2013 4:06:32 AM	10981
Anthracene	ND	0.60		µg/L	1	12/28/2013 4:06:32 AM	10981
Fluoranthene	ND	0.30		µg/L	1	12/28/2013 4:06:32 AM	10981
Pyrene	ND	0.30		µg/L	1	12/28/2013 4:06:32 AM	10981
Benz(a)anthracene	ND	0.070		µg/L	1	12/28/2013 4:06:32 AM	10981
Chrysene	ND	0.20		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(a)pyrene	ND	0.070		µg/L	1	12/28/2013 4:06:32 AM	10981
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/28/2013 4:06:32 AM	10981
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/28/2013 4:06:32 AM	10981
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/28/2013 4:06:32 AM	10981
Surr: Benzo(e)pyrene	35.0	24.5-139		%REC	1	12/28/2013 4:06:32 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	17	0.50	*	mg/L	5	12/24/2013 4:04:41 PM	R15742
Chloride	67	2.5		mg/L	5	12/23/2013 9:40:14 PM	R15706
Bromide	ND	0.50		mg/L	5	12/23/2013 9:40:14 PM	R15706
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/24/2013 4:04:41 PM	R15742
Sulfate	250	2.5		mg/L	5	12/23/2013 9:40:14 PM	R15706
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/23/2013 11:44:21 PM	R15706

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- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- P Sample pH greater than 2 for VOA and TOC only.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.040	0.020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Barium	0.051	0.0020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Boron	2.0	0.20		mg/L	5	12/23/2013 6:05:51 PM	R15707
Cadmium	ND	0.0020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Calcium	9.6	1.0		mg/L	1	12/30/2013 12:28:50 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/23/2013 6:03:59 PM	R15707
Copper	0.029	0.0060		mg/L	1	12/27/2013 2:39:09 PM	R15768
Iron	0.29	0.020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:28:50 PM	R15805
Manganese	0.028	0.0020		mg/L	1	12/23/2013 6:03:59 PM	R15707
Molybdenum	0.094	0.0080		mg/L	1	12/23/2013 6:03:59 PM	R15707
Nickel	0.049	0.010		mg/L	1	12/27/2013 2:39:09 PM	R15768
Potassium	8.6	1.0		mg/L	1	12/30/2013 12:28:50 PM	R15805
Silver	ND	0.0050		mg/L	1	12/23/2013 6:03:59 PM	R15707
Sodium	260	5.0		mg/L	5	12/30/2013 12:30:46 PM	R15805
Zinc	0.027	0.010		mg/L	1	12/27/2013 2:39:09 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	3.2	0.10	*	mg/L	100	1/7/2014 6:12:38 PM	R15934
Lead	0.0011	0.0010		mg/L	1	1/7/2014 2:59:51 PM	R15933
Selenium	0.0021	0.0010		mg/L	1	1/7/2014 2:59:51 PM	R15933
Uranium	ND	0.0010		mg/L	1	1/8/2014 2:18:28 PM	R15963
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:13:33 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzoic acid	160	40		µg/L	1	12/26/2013 10:42:21 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980

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Qualifiers:

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- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- P Sample pH greater than 2 for VOA and TOC only.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 10:42:21 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Phenol	18	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 10:42:21 PM	10980
Surr: 2-Fluorophenol	49.9	22.7-98		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: Phenol-d5	36.5	23.4-74.9		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: 2,4,6-Tribromophenol	84.2	23.3-111		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: Nitrobenzene-d5	71.8	36.8-111		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: 2-Fluorobiphenyl	84.9	38.3-110		%REC	1	12/26/2013 10:42:21 PM	10980
Surr: 4-Terphenyl-d14	89.5	52.1-116		%REC	1	12/26/2013 10:42:21 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	4.8	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Toluene	2.0	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,4-Trimethylbenzene	1.6	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Naphthalene	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Acetone	78	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Butanone	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,3-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/29/2013 8:44:38 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Styrene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 63-7
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 1:00:00 PM
Lab ID: 1312A59-002
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	370	10		µg/L	10	12/28/2013 9:40:30 AM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Trichloroethene (TCE)	1.0	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/29/2013 8:44:38 PM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/29/2013 8:44:38 PM	R15774
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
Surr: Dibromofluoromethane	107	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
Surr: Toluene-d8	94.1	70-130		%REC	1	12/29/2013 8:44:38 PM	R15774
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	2.8	1.0		mg/L	1	12/24/2013	10974
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	49	12		µg/L	5	1/8/2014	11134
SM4500-H+B: PH						Analyst: **SRM**	
pH	8.41	1.68	H	pH units	1	12/23/2013 7:11:07 PM	R15709
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	210	20		mg/L CaCO3	1	12/26/2013 1:13:27 PM	R15744
Carbonate (As CaCO3)	2.9	2.0		mg/L CaCO3	1	12/26/2013 1:13:27 PM	R15744
Total Alkalinity (as CaCO3)	210	20		mg/L CaCO3	1	12/26/2013 1:13:27 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	800	40.0	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 2:59:43 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 4:14:27 AM	10979
Surr: Decachlorobiphenyl	85.6	17-123		%REC	1	12/30/2013 4:14:27 AM	10979
Surr: Tetrachloro-m-xylene	80.4	22.6-113		%REC	1	12/30/2013 4:14:27 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/28/2013 4:35:51 AM	10981
1-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:35:51 AM	10981
2-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 4:35:51 AM	10981
Acenaphthylene	ND	2.5		µg/L	1	12/28/2013 4:35:51 AM	10981
Acenaphthene	ND	5.0		µg/L	1	12/28/2013 4:35:51 AM	10981
Fluorene	ND	0.80		µg/L	1	12/28/2013 4:35:51 AM	10981
Phenanthrene	ND	0.60		µg/L	1	12/28/2013 4:35:51 AM	10981
Anthracene	ND	0.60		µg/L	1	12/28/2013 4:35:51 AM	10981
Fluoranthene	ND	0.30		µg/L	1	12/28/2013 4:35:51 AM	10981
Pyrene	ND	0.30		µg/L	1	12/28/2013 4:35:51 AM	10981
Benz(a)anthracene	ND	0.070		µg/L	1	12/28/2013 4:35:51 AM	10981
Chrysene	ND	0.20		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(a)pyrene	ND	0.070		µg/L	1	12/28/2013 4:35:51 AM	10981
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/28/2013 4:35:51 AM	10981
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/28/2013 4:35:51 AM	10981
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/28/2013 4:35:51 AM	10981
Surr: Benzo(e)pyrene	61.9	24.5-139		%REC	1	12/28/2013 4:35:51 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	3.9	0.50		mg/L	5	12/24/2013 4:17:06 PM	R15742
Chloride	170	10		mg/L	20	12/23/2013 10:17:29 PM	R15706
Bromide	0.80	0.50		mg/L	5	12/23/2013 10:05:04 PM	R15706
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	12/24/2013 4:17:06 PM	R15742
Sulfate	700	10	*	mg/L	20	12/23/2013 10:17:29 PM	R15706
Nitrate+Nitrite as N	2.9	1.0		mg/L	5	12/23/2013 11:56:46 PM	R15706

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Qualifiers:

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.069	0.020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Barium	0.099	0.0020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Boron	0.52	0.040		mg/L	1	12/23/2013 6:07:31 PM	R15707
Cadmium	ND	0.0020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Calcium	58	1.0		mg/L	1	12/30/2013 12:32:28 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/23/2013 6:07:31 PM	R15707
Copper	ND	0.0060		mg/L	1	12/27/2013 2:42:47 PM	R15768
Iron	0.033	0.020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:32:28 PM	R15805
Manganese	0.019	0.0020		mg/L	1	12/23/2013 6:07:31 PM	R15707
Molybdenum	0.055	0.0080		mg/L	1	12/23/2013 6:07:31 PM	R15707
Nickel	ND	0.010		mg/L	1	12/27/2013 2:42:47 PM	R15768
Potassium	31	1.0		mg/L	1	12/30/2013 12:32:28 PM	R15805
Silver	ND	0.0050		mg/L	1	12/23/2013 6:07:31 PM	R15707
Sodium	420	5.0		mg/L	5	12/30/2013 12:34:24 PM	R15805
Zinc	ND	0.010		mg/L	1	12/27/2013 2:42:47 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.013	0.0010	*	mg/L	1	1/7/2014 3:02:31 PM	R15933
Lead	ND	0.0010		mg/L	1	1/7/2014 3:02:31 PM	R15933
Selenium	0.010	0.0010		mg/L	1	1/7/2014 3:02:31 PM	R15933
Uranium	0.0013	0.0010		mg/L	1	1/7/2014 6:15:17 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:15:19 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzoic acid	ND	40		µg/L	1	12/26/2013 11:11:00 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003
Matrix: AQUEOUS
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 11:11:00 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Phenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:11:00 PM	10980
Surr: 2-Fluorophenol	57.1	22.7-98		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: Phenol-d5	46.8	23.4-74.9		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: 2,4,6-Tribromophenol	89.0	23.3-111		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: Nitrobenzene-d5	75.2	36.8-111		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: 2-Fluorobiphenyl	83.1	38.3-110		%REC	1	12/26/2013 11:11:00 PM	10980
Surr: 4-Terphenyl-d14	80.8	52.1-116		%REC	1	12/26/2013 11:11:00 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Toluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Ethylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,4-Trimethylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,3,5-Trimethylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Naphthalene	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
1-Methylnaphthalene	ND	40		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Methylnaphthalene	ND	40		µg/L	10	12/28/2013 11:33:52 AM	R15774
Acetone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Bromobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Bromodichloromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Bromomethane	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Butanone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Carbon disulfide	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Carbon Tetrachloride	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chloroethane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chloroform	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Chloromethane	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Chlorotoluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
4-Chlorotoluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
cis-1,2-DCE	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
cis-1,3-Dichloropropene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
Dibromochloromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Dibromomethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,3-Dichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,4-Dichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Dichlorodifluoromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1-Dichloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1-Dichloroethene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2-Dichloropropane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,3-Dichloropropane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
2,2-Dichloropropane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1-Dichloropropene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Hexachlorobutadiene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
2-Hexanone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Isopropylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
4-Isopropyltoluene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
4-Methyl-2-pentanone	ND	100		µg/L	10	12/28/2013 11:33:52 AM	R15774
Methylene Chloride	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
n-Butylbenzene	ND	30		µg/L	10	12/28/2013 11:33:52 AM	R15774
n-Propylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
sec-Butylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Styrene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
tert-Butylbenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: IW-1
Project: Lightning Dock Geothermal GW Quality
Collection Date: 12/20/2013 5:00:00 PM
Lab ID: 1312A59-003 **Matrix:** AQUEOUS **Received Date:** 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
trans-1,2-DCE	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
trans-1,3-Dichloropropene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,3-Trichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,4-Trichlorobenzene	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,1-Trichloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,1,2-Trichloroethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Trichloroethene (TCE)	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Trichlorofluoromethane	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
1,2,3-Trichloropropane	ND	20		µg/L	10	12/28/2013 11:33:52 AM	R15774
Vinyl chloride	ND	10		µg/L	10	12/28/2013 11:33:52 AM	R15774
Xylenes, Total	ND	15		µg/L	10	12/28/2013 11:33:52 AM	R15774
Surr: 1,2-Dichloroethane-d4	99.8	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
Surr: 4-Bromofluorobenzene	110	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
Surr: Dibromofluoromethane	107	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
Surr: Toluene-d8	94.1	70-130		%REC	10	12/28/2013 11:33:52 AM	R15774
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	1.4	1.1		mg/L	1	12/24/2013	10974
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	6.7	2.5		µg/L	1	1/8/2014	11134
SM4500-H+B: PH						Analyst: **SRM**	
pH	8.59	1.68	*H	pH units	1	12/23/2013 7:15:09 PM	R15709
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	100	20		mg/L CaCO3	1	12/26/2013 1:26:03 PM	R15744
Carbonate (As CaCO3)	9.9	2.0		mg/L CaCO3	1	12/26/2013 1:26:03 PM	R15744
Total Alkalinity (as CaCO3)	110	20		mg/L CaCO3	1	12/26/2013 1:26:03 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1480	200	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal GW Quality
Collection Date:
Lab ID: 1312A59-004
Matrix: TRIP BLANK
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 3:13:39 PM	10989
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Toluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Naphthalene	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Acetone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromoform	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Butanone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal GW Quality
Collection Date:
Lab ID: 1312A59-004
Matrix: TRIP BLANK
Received Date: 12/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/28/2013 12:02:19 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Styrene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/28/2013 12:02:19 PM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/28/2013 12:02:19 PM	R15774
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774
Surr: Dibromofluoromethane	109	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774
Surr: Toluene-d8	93.3	70-130		%REC	1	12/28/2013 12:02:19 PM	R15774

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

Qualifiers:

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

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131224034
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312A59
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131224034-001	**Sampling Date**	12/19/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-001M / LDG 45-7	**Sampling Time**	11:00 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number	131224034-002	**Sampling Date**	12/19/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-001O / LDG 45-7	**Sampling Time**	11:00 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	ND	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Sample Number	131224034-003	**Sampling Date**	12/20/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-002M / LDG 63-7	**Sampling Time**	1:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number	131224034-004	**Sampling Date**	12/20/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-002O / LDG 63-7	**Sampling Time**	1:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	0.0808	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131224034
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312A59
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131224034-005	**Sampling Date**	12/20/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-003M / IW-1	**Sampling Time**	5:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number	131224034-006	**Sampling Date**	12/20/2013	**Date/Time Received**	12/24/2013 12:26 PM
Client Sample ID	1312A59-003O / IW-1	**Sampling Time**	5:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	1.92	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120851-001
Client Sample ID: 1312A59-001K LDG 45-7

Revised Date: 01/14/14
Report Date: 01/09/14
Collection Date: 12/19/13 11:00
DateReceived: 12/24/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.9	mg/L		0.1		E200.7	12/30/13 13:50 / eli-b
Rubidium	0.25	mg/L		0.01		E200.8	01/09/14 11:42 / eli-b
Ruthenium	ND	mg/L		0.01		E200.8	01/09/14 11:42 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	01/09/14 11:42 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	2560	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 precision (±)	138	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 MDC	184	pCi/L				D5072-92	12/26/13 13:29 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120851-002
Client Sample ID: 1312A59-002K LDG 63-7

Revised Date: 01/14/14
Report Date: 01/09/14
Collection Date: 12/20/13 13:00
DateReceived: 12/24/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.6	mg/L		0.1		E200.7	12/30/13 14:01 / eli-b
Rubidium	0.07	mg/L		0.01		E200.8	01/09/14 11:46 / eli-b
Ruthenium	ND	mg/L		0.01		E200.8	01/09/14 11:46 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	01/09/14 11:46 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	78.6	pCi/L	U			D5072-92	12/26/13 13:29 / dpb
Radon 222 precision (±)	87.6	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 MDC	150	pCi/L				D5072-92	12/26/13 13:29 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120851-003
Client Sample ID: 1312A59-003K IW-1

Revised Date: 01/14/14
Report Date: 01/09/14
Collection Date: 12/20/13 17:00
DateReceived: 12/24/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.6	mg/L		0.1		E200.7	12/30/13 14:05 / eli-b
Rubidium	0.21	mg/L		0.01		E200.8	01/09/14 11:50 / eli-b
Ruthenium	ND	mg/L		0.01		E200.8	01/09/14 11:50 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	01/09/14 11:50 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	1090	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 precision (±)	98.3	pCi/L				D5072-92	12/26/13 13:29 / dpb
Radon 222 MDC	145	pCi/L				D5072-92	12/26/13 13:29 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/14/14
Report Date: 01/09/14
Work Order: C13120851

Client: Hall Environmental
Project: Not Indicated

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92										Batch: R182062
Sample ID: C13120851-003BDUP	3	Sample Duplicate				Run: PACKARD 3100TR_131226A			12/26/13 13:29	
Radon 222		982	pCi/L					10	20	
Radon 222 precision (±)		97.0	pCi/L							
Radon 222 MDC		145	pCi/L							
Sample ID: MB-R182062	3	Method Blank				Run: PACKARD 3100TR_131226A			12/26/13 13:29	
Radon 222		9	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R182062		Laboratory Control Sample				Run: PACKARD 3100TR_131226A			12/26/13 13:29	
Radon 222		2210	pCi/L		97	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/14/14
Report Date: 01/09/14
Work Order: C13120851

Client: Hall Environmental
Project: Not Indicated

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: SUB-B217135	
Sample ID: ICV		Continuing Calibration Verification Standard							12/30/13 10:48	
Lithium		1.20	mg/L	0.10	96	95	105			
Method: E200.7									Batch: B_R217135	
Sample ID: MB-6500DIS131230A		Method Blank				Run: SUB-B217135			12/30/13 11:11	
Lithium		ND	mg/L	0.0003						
Sample ID: LFB-6500DIS131230A		Laboratory Fortified Blank				Run: SUB-B217135			12/30/13 11:15	
Lithium		1.02	mg/L	0.10	102	85	115			
Sample ID: B13121948-001AMS2		Sample Matrix Spike				Run: SUB-B217135			12/30/13 13:35	
Lithium		6.00	mg/L	0.10	101	70	130			
Sample ID: B13121948-001AMSD2		Sample Matrix Spike Duplicate				Run: SUB-B217135			12/30/13 13:38	
Lithium		6.30	mg/L	0.10	107	70	130	4.8	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/14/14

Client: Hall Environmental

Report Date: 01/09/14

Project: Not Indicated

Work Order: C13120851

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B217575	
Sample ID: QCS-	3	Initial Calibration Verification Standard							01/09/14 09:38	
Rubidium		0.0527	mg/L	0.010	105	90	110			
Ruthenium		0.0520	mg/L	0.010	104	90	110			
Tungsten		0.0526	mg/L	0.10	105	90	110			
Method: E200.8									Batch: B_R217575	
Sample ID: LFB	3	Laboratory Fortified Blank				Run: SUB-B217575			01/09/14 09:54	
Rubidium		0.0492	mg/L	0.010	98	85	115			
Ruthenium		0.0530	mg/L	0.010	106	85	115			
Tungsten		0.0508	mg/L	0.10	102	85	115			
Sample ID: LRB	3	Method Blank				Run: SUB-B217575			01/09/14 10:22	
Rubidium		ND	mg/L	0.001						
Ruthenium		ND	mg/L	0.001						
Tungsten		ND	mg/L	0.001						
Sample ID: B13121948-001AMS	2	Sample Matrix Spike				Run: SUB-B217575			01/09/14 11:54	
Ruthenium		0.0536	mg/L	0.010	107	70	130			
Tungsten		0.141	mg/L	0.10	137	70	130			S
Sample ID: B13121948-001AMSD	2	Sample Matrix Spike Duplicate				Run: SUB-B217575			01/09/14 11:58	
Ruthenium		0.0534	mg/L	0.010	107	70	130	0.3	20	
Tungsten		0.138	mg/L	0.10	131	70	130	2.1	20	S

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

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ANALYTICAL RESULTS

Project: 1312A59
Pace Project No.: 30110362

Sample: 1312A59-001 LDG 45-7 **Lab ID: 30110362001** Collected: 12/19/13 11:00 Received: 12/24/13 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**6.49 ± 1.35 (0.367)**	pCi/L	01/08/14 11:27	13982-63-3	
Radium-228	EPA 904.0	**0.522 ± 0.331 (0.614)**	pCi/L	01/09/14 13:06	15262-20-1	

Sample: 1312A59-002 LDG 63-7 **Lab ID: 30110362002** Collected: 12/20/13 13:00 Received: 12/24/13 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.220 ± 0.306 (0.775)**	pCi/L	01/08/14 11:29	13982-63-3	
Radium-228	EPA 904.0	**0.0100 ± 0.365 (0.847)**	pCi/L	01/09/14 13:29	15262-20-1	

Sample: 1312A59-003 IW-1 **Lab ID: 30110362003** Collected: 12/20/13 17:00 Received: 12/24/13 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**1.04 ± 0.535 (0.561)**	pCi/L	01/08/14 11:27	13982-63-3	
Radium-228	EPA 904.0	**0.462 ± 0.343 (0.666)**	pCi/L	01/09/14 13:29	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1312A59
Pace Project No.: 30110362

QC Batch: RADC/18195 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30110362001, 30110362002, 30110362003

METHOD BLANK: 674584 Matrix: Water
Associated Lab Samples: 30110362001, 30110362002, 30110362003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.102 ± 0.246 (0.614)	pCi/L	01/08/14 10:30	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1312A59
Pace Project No.: 30110362

QC Batch: RADC/18198 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30110362001, 30110362002, 30110362003

METHOD BLANK: 674587 Matrix: Water
Associated Lab Samples: 30110362001, 30110362002, 30110362003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.211 ± 0.277 (0.591)	pCi/L	01/09/14 13:04	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453037** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	107	85	115			
Barium	0.49	0.0020	0.5000	0	97.1	85	115			
Iron	0.50	0.040	0.5000	0	99.2	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.3	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.4	85	115			
Silver	0.099	0.0050	0.1000	0	98.7	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.51	0.0060	0.5000	0	102	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.50	0.010	0.5000	0	99.4	85	115			
Zinc	0.52	0.010	0.5000	0	103	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456073** 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**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456074** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	85	115			
Iron	0.54	0.020	0.5000	0	107	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **1312A59-003JMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **IW-1**	Batch ID: **R15933**	RunNo: **15933**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459412** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.036	0.0010	0.02500	0.01338	90.2	70	130			
Lead	0.029	0.0010	0.02500	.00007590	116	70	130			
Selenium	0.031	0.0010	0.02500	0.01024	84.0	70	130			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15933**	RunNo: **15933**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459413** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.027	0.0010	0.02500	0	106	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15933**	RunNo: **15933**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459414** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
nic	0.023	0.0010	0.02500	0	93.7	85	115			
enium	0.023	0.0010	0.02500	0	92.5	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15933**	RunNo: **15933**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **1312A59-003JMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **IW-1**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.034	0.0010	0.02500	0.001347	129	70	130			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.027	0.0010	0.02500	0	109	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-11092**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **11092**	RunNo: **15947**
Prep Date: **1/6/2014**	Analysis Date: **1/7/2014**	SeqNo: **459682** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-11092**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **11092**	RunNo: **15947**
Prep Date: **1/6/2014**	Analysis Date: **1/7/2014**	SeqNo: **459683** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/23/2013** SeqNo: **452922** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	103	90	110			
Bromide	12	0.10	12.00	0	102	90	110			
Sulfate	31	0.50	30.00	0	105	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	107	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/23/2013** SeqNo: **452933** 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	93.3	90	110			
Bromide	4.9	0.10	5.000	0	97.4	90	110			
Sulfate	12	0.50	12.50	0	94.3	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.7	90	110			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBW** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/23/2013** SeqNo: **452935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSW** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/23/2013** SeqNo: **452936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.8	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Sulfate	9.7	0.50	10.00	0	97.2	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.7	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/23/2013** SeqNo: **452945** Units: **mg/L**

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

Qualifiers:

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

OC SUMMARY REPORT

WO#: **1312A59**

ıll Environmental Analysis Laboratory, Inc.

15-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**
Prep Date: Analysis Date: **12/23/2013** SeqNo: **452945** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	96.9	90	110			
Bromide	7.9	0.10	8.000	0	99.0	90	110			
Sulfate	20	0.50	20.00	0	98.8	90	110			
Nitrate+Nitrite as N	8.1	0.20	8.000	0	101	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**
Prep Date: Analysis Date: **12/23/2013** SeqNo: **452957** 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	93.6	90	110			
Bromide	4.9	0.10	5.000	0	97.4	90	110			
Sulfate	12	0.50	12.50	0	95.4	90	110			
Nitrate+Nitrite as N	4.9	0.20	5.000	0	97.5	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
ınt ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**
rep Date: Analysis Date: **12/23/2013** SeqNo: **452969** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.6	0.50	8.000	0	95.2	90	110			
Bromide	7.8	0.10	8.000	0	97.1	90	110			
Sulfate	19	0.50	20.00	0	97.3	90	110			
Nitrate+Nitrite as N	7.9	0.20	8.000	0	99.0	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**
Prep Date: Analysis Date: **12/23/2013** SeqNo: **452981** 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	93.6	90	110			
Bromide	4.9	0.10	5.000	0	97.4	90	110			
Sulfate	12	0.50	12.50	0	95.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.9	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **452993** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **452993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.7	0.50	8.000	0	96.3	90	110			
Bromide	7.8	0.10	8.000	0	97.9	90	110			
Sulfate	20	0.50	20.00	0	97.6	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	99.9	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **453005** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.4	90	110			
Bromide	4.8	0.10	5.000	0	96.5	90	110			
Sulfate	12	0.50	12.50	0	94.8	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.0	90	110			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBW** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **453007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSW** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **453008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.0	90	110			
Bromide	2.5	0.10	2.500	0	99.0	90	110			
Sulfate	9.7	0.50	10.00	0	97.0	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	98.9	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15706** RunNo: **15706**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **453017** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	97.3	90	110			
Bromide	8.0	0.10	8.000	0	99.4	90	110			
Sulfate	20	0.50	20.00	0	98.6	90	110			
Nitrate+Nitrite as N	8.1	0.20	8.000	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15706**	RunNo: **15706**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **453027** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.0	90	110			
Bromide	4.9	0.10	5.000	0	98.4	90	110			
Sulfate	12	0.50	12.50	0	96.3	90	110			
Nitrate+Nitrite as N	4.9	0.20	5.000	0	98.2	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
ent ID: **PBW**	Batch ID: **R15742**	RunNo: **15742**
rep Date:	Analysis Date: **12/24/2013**	SeqNo: **454474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID **LCS-b**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	95.0	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.7	0.10	1.600	0	108	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454496** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	109	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.7	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454508** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.8	0.10	1.600	0	109	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.9	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15742**	RunNo: **15742**
Prep Date:	Analysis Date: **12/24/2013**	SeqNo: **454513** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	107	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10974**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10974**	RunNo: **15713**
Prep Date: **12/24/2013**	Analysis Date: **12/24/2013**	SeqNo: **453480** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10974**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10974**	RunNo: **15713**
Prep Date: **12/24/2013**	Analysis Date: **12/24/2013**	SeqNo: **453481** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	92.4	80	120			

Sample ID **LCSD-10974**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10974**	RunNo: **15713**
Prep Date: **12/24/2013**	Analysis Date: **12/24/2013**	SeqNo: **453482** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.7	1.0	5.000	0	94.8	80	120	2.56	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10989**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10989**	RunNo: **15731**
Prep Date: **12/26/2013**	Analysis Date: **12/26/2013**	SeqNo: **454148** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10989**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10989**	RunNo: **15731**
Prep Date: **12/26/2013**	Analysis Date: **12/26/2013**	SeqNo: **454165** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10979**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/29/2013**	SeqNo: **455290** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		82.4	17	123			
Surr: Tetrachloro-m-xylene	2.0		2.500		81.6	22.6	113			

Sample ID **1312A59-003CMS**	SampType: **MS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **IW-1**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/30/2013**	SeqNo: **456259** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]clor 1016	2.8	1.0	5.000	0	55.4	70	130			S
lor 1260	3.3	1.0	5.000	0	65.9	61.1	129			
Surr: Decachlorobiphenyl	1.9		2.500		74.4	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.6	22.6	113			

Sample ID **1312A59-003CMSD**	SampType: **MSD**	TestCode: **EPA Method 8082: PCB's**
Client ID: **IW-1**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/30/2013**	SeqNo: **456260** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.0	1.0	5.000	0	59.9	70	130	7.70	20	S
Aroclor 1260	3.6	1.0	5.000	0	71.1	61.1	129	7.53	12.9	
Surr: Decachlorobiphenyl	2.0		2.500		80.8	17	123	0	0	
Surr: Tetrachloro-m-xylene	1.8		2.500		70.4	22.6	113	0	0	

Sample ID **LCS-10979**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/31/2013**	SeqNo: **456267** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
Aroclor 1260	3.7	1.0	5.000	0	74.1	35.7	137			
Surr: Decachlorobiphenyl	2.8		2.500		113	17	123			
Surr: Tetrachloro-m-xylene	2.9		2.500		116	22.6	113			S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
s-1,2-DCE	ND	1.0								
s-1,3-Dichloropropene	ND	1.0								
,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	99.3	82.2	124			
Chlorobenzene	19	1.0	20.00	0	94.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **100ng lcs**	SampType: **LCS**			TestCode: **EPA Method 8260B: VOLATILES**					
Client ID: **LCSW**	Batch ID: **R15774**			RunNo: **15774**					
Prep Date:	Analysis Date: **12/27/2013**			SeqNo: **455191**		Units: **µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	116	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	91.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **b5**	SampType: **MBLK**			TestCode: **EPA Method 8260B: VOLATILES**					
Client ID: **PBW**	Batch ID: **R15774**			RunNo: **15774**					
Prep Date:	Analysis Date: **12/27/2013**			SeqNo: **455218**		Units: **µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
›ropylbenzene	ND	1.0								
ɔpropyltoluene	ND	1.0								
.Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455220** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	95.1	82.2	124			
Chlorobenzene	19	1.0	20.00	0	93.5	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	93.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
'2-ethylhexyl)phthalate	ND	10								
omophenyl phenyl ether	ND	10								
.tyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		55.1	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	23.3	111			
Surr: Nitrobenzene-d5	69		100.0		68.8	36.8	111			
Surr: 2-Fluorobiphenyl	71		100.0		70.6	38.3	110			
Surr: 4-Terphenyl-d14	77		100.0		77.5	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **lcs-10980**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	65.8	48	101			
4-Chloro-3-methylphenol	130	10	200.0	0	66.5	47.9	109			
2-Chlorophenol	120	10	200.0	0	59.5	40	105			
1,4-Dichlorobenzene	57	10	100.0	0	57.2	40.8	94.3			
2,4-Dinitrotoluene	64	10	100.0	0	64.1	28.3	131			
N-Nitrosodi-n-propylamine	66	10	100.0	0	65.6	46.2	119			
4-Nitrophenol	44	10	200.0	0	21.9	10.5	67.9			
Pentachlorophenol	53	20	200.0	0	26.7	22.4	81.1			
Phenol	73	10	200.0	0	36.7	21.4	72.9			
Pyrene	61	10	100.0	0	60.9	46.9	109			
1,2,4-Trichlorobenzene	55	10	100.0	0	54.6	43.1	98.4			
Surr: 2-Fluorophenol	94		200.0		47.1	22.7	98			
Surr: Phenol-d5	72		200.0		36.0	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	60		100.0		59.7	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		67.9	38.3	110			
Surr: 4-Terphenyl-d14	72		100.0		71.6	52.1	116			

Sample ID **lcsd-10980**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	48	101	13.8	25	
4-Chloro-3-methylphenol	150	10	200.0	0	74.3	47.9	109	11.1	32.7	
2-Chlorophenol	120	10	200.0	0	62.4	40	105	4.89	20	
1,4-Dichlorobenzene	60	10	100.0	0	60.1	40.8	94.3	4.94	20	
2,4-Dinitrotoluene	68	10	100.0	0	68.5	28.3	131	6.64	29.9	
N-Nitrosodi-n-propylamine	69	10	100.0	0	69.0	46.2	119	5.17	23.1	
4-Nitrophenol	48	10	200.0	0	24.0	10.5	67.9	8.93	40.5	
Pentachlorophenol	70	20	200.0	0	35.0	22.4	81.1	27.2	37.3	
Phenol	77	10	200.0	0	38.4	21.4	72.9	4.45	20	
Pyrene	74	10	100.0	0	73.8	46.9	109	19.2	26.5	
1,2,4-Trichlorobenzene	59	10	100.0	0	59.4	43.1	98.4	8.32	27.2	
Surr: 2-Fluorophenol	92		200.0		45.9	22.7	98	0	0	
Surr: Phenol-d5	74		200.0		36.8	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		70.5	23.3	111	0	0	
Surr: Nitrobenzene-d5	63		100.0		62.9	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	73		100.0		72.6	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID	**lcsd-10980**	SampType:	**LCSD**		TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**10980**		RunNo:	**15747**					
Prep Date:	**12/24/2013**	Analysis Date:	**12/26/2013**		SeqNo:	**454622**	Units:	**µg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		81		100.0		80.5	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10981**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
?nz(a,h)anthracene	ND	0.12								
zo(g,h,i)perylene	ND	0.12								
?eno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	22		20.00		108	24.5	139			

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	0	53.2	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	45.1	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	41.9	36.6	89.6			
Acenaphthylene	47	2.5	80.20	0	58.3	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.6	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.4	0.60	4.020	0	60.4	43.9	111			
Anthracene	2.3	0.60	4.020	0	57.2	44.3	103			
Fluoranthene	4.5	0.30	8.020	0	56.2	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.2	32.6	103			
Benz(a)anthracene	0.47	0.070	0.8020	0	58.6	43	114			
Chrysene	2.2	0.20	4.020	0	55.2	40.2	100			
Benzo(b)fluoranthene	0.59	0.10	1.002	0	58.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.30	0.070	0.5020	0	59.8	34.5	118			
Dibenz(a,h)anthracene	0.60	0.12	1.002	0	59.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	42.4	113			
Surr: Benzo(e)pyrene	16		20.00		77.8	24.5	139			

Sample ID **1312A59-003DMS**	SampType: **MS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **IW-1**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/28/2013**	SeqNo: **455279** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	25	2.0	80.00	0	30.8	70	130			S
1-Methylnaphthalene	22	2.0	80.20	0	26.9	70	130			S
2-Methylnaphthalene	21	2.0	80.00	0	25.9	70	130			S
Acenaphthylene	26	2.5	80.20	0	32.3	70	130			S
Acenaphthene	23	5.0	80.00	0	28.2	70	130			S
Fluorene	2.3	0.80	8.020	0	28.9	70	130			S
Phenanthrene	1.3	0.60	4.020	0	32.1	70	130			S
Anthracene	1.2	0.60	4.020	0	30.8	70	130			S
Fluoranthene	2.6	0.30	8.020	0	31.9	70	130			S
Pyrene	2.5	0.30	8.020	0	31.4	70	130			S
Benz(a)anthracene	0.25	0.070	0.8020	0	31.2	70	130			S
Chrysene	1.2	0.20	4.020	0	28.9	70	130			S
Benzo(b)fluoranthene	0.30	0.10	1.002	0	29.9	70	130			S
Benzo(k)fluoranthene	0.16	0.070	0.5000	0	32.0	70	130			S
Benzo(a)pyrene	0.16	0.070	0.5020	0	31.9	70	130			S
Dibenz(a,h)anthracene	0.31	0.12	1.002	0	30.9	70	130			S
Benzo(g,h,i)perylene	0.30	0.12	1.000	0.04000	26.0	70	130			S
Indeno(1,2,3-cd)pyrene	0.67	0.25	2.004	0	33.4	70	130			S
Surr: Benzo(e)pyrene	8.1		20.00		40.7	24.5	139			

Sample ID **1312A59-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **IW-1**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/28/2013**	SeqNo: **455280** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	28	2.0	80.00	0	35.2	70	130	13.2	20	S
1-Methylnaphthalene	23	2.0	80.20	0	28.4	70	130	5.46	20	S
2-Methylnaphthalene	21	2.0	80.00	0	26.1	70	130	0.865	20	S
Acenaphthylene	30	2.5	80.20	0	37.9	70	130	15.9	20	S

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **1312A59-003DMSD** SampType: **MSD** TestCode: **EPA Method 8310: PAHs**

Client ID: **IW-1** Batch ID: **10981** RunNo: **15775**

Prep Date: **12/24/2013** Analysis Date: **12/28/2013** SeqNo: **455280** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	24	5.0	80.00	0	29.8	70	130	5.52	20	S
Fluorene	2.5	0.80	8.020	0	30.5	70	130	5.45	20	S
Phenanthrene	1.5	0.60	4.020	0	37.3	70	130	15.1	20	S
Anthracene	1.4	0.60	4.020	0	35.3	70	130	13.5	20	S
Fluoranthene	2.9	0.30	8.020	0	36.0	70	130	12.1	20	S
Pyrene	2.9	0.30	8.020	0	35.7	70	130	12.6	20	S
Benz(a)anthracene	0.29	0.070	0.8020	0	36.2	70	130	14.8	20	S
Chrysene	1.4	0.20	4.020	0	33.8	70	130	15.9	20	S
Benzo(b)fluoranthene	0.37	0.10	1.002	0	36.9	70	130	20.9	20	RS
Benzo(k)fluoranthene	0.21	0.070	0.5000	0	42.0	70	130	27.0	20	RS
Benzo(a)pyrene	0.17	0.070	0.5020	0	33.9	70	130	6.06	20	S
Dibenz(a,h)anthracene	0.36	0.12	1.002	0	35.9	70	130	14.9	20	S
Benzo(g,h,i)perylene	0.34	0.12	1.000	0.04000	30.0	70	130	12.5	20	S
Indeno(1,2,3-cd)pyrene	0.77	0.25	2.004	0	38.4	70	130	13.9	20	S
Surr: Benzo(e)pyrene	9.6		20.00		47.8	24.5	139	0		

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-11134**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459499** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-11134**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	110	73.7	135			

Sample ID **LCSD-11134**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSS02**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	73.7	135	17.9	21.4	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **mb-1**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454539** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454540** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312A59**

15-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal GW Quality Monito

Sample ID **MB-10984**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454897** 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-10984**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454898** 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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312A59 | RcptNo: 1

Received by/date: 12/20/13

Logged By: Lindsay Mangin 12/21/2013 10:00:00 AM

Completed By: Lindsay Mangin 12/23/2013 9:53:25 AM

Reviewed By: 12/23/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 2 7 3 (<2 or >12 unless noted)

Adjusted? No

Checked by: MJ

Special Handling (if applicable)

16. 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:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Not Present			

Chain-of-Custody Record

Client: AMEC

Mailing Address: 8519 Jefferson ST NE
Albuquerque, NM ~~87109~~ 87113

Phone #: (505) 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Lighting Dock Geothermal GW Quality Monitoring

Project #: 11-517-00102.06

Project Manager: David Janney

Sampler: Eric Koenig

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6

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. 1312A59	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12/19/13	11:00	water	LDG 45-7	21	see	-001		SEE					REMARKS									
12/20/13	13:00	↓	LDG 63-7	21	attached	-002																
12/20/13	7:00	↓	IW-1 *	~~2~~ 22	List	-003																
			Trip Blank			-004																

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/21/13	10:06	Eric D. Koenig		12/21/13	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: See attached analyte List. All dissolved metals Field filtered
*QC Sample

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

January 16, 2014

David Janney

Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal Water Quality Monitoring OrderNo.: 1312B40

Dear David Janney:

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/24/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312B40**
Date Reported: **1/16/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001 **Matrix:** AQUEOUS **Received Date:** 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 3:41:42 PM	10989
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1221	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1232	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1242	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1248	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1254	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Aroclor 1260	ND	1.0		µg/L	1	12/30/2013 6:32:14 AM	10979
Surr: Decachlorobiphenyl	80.8	17-123		%REC	1	12/30/2013 6:32:14 AM	10979
Surr: Tetrachloro-m-xylene	72.8	22.6-113		%REC	1	12/30/2013 6:32:14 AM	10979
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	2.2	2.0		µg/L	1	12/28/2013 6:03:46 AM	10981
1-Methylnaphthalene	ND	2.0		µg/L	1	12/28/2013 6:03:46 AM	10981
2-Methylnaphthalene	3.1	2.0		µg/L	1	12/28/2013 6:03:46 AM	10981
Acenaphthylene	ND	2.5		µg/L	1	12/28/2013 6:03:46 AM	10981
Acenaphthene	ND	5.0		µg/L	1	12/28/2013 6:03:46 AM	10981
Fluorene	ND	0.80		µg/L	1	12/28/2013 6:03:46 AM	10981
Phenanthrene	0.71	0.60		µg/L	1	12/28/2013 6:03:46 AM	10981
Anthracene	ND	0.60		µg/L	1	12/28/2013 6:03:46 AM	10981
Fluoranthene	ND	0.30		µg/L	1	12/28/2013 6:03:46 AM	10981
Pyrene	ND	0.30		µg/L	1	12/28/2013 6:03:46 AM	10981
Benz(a)anthracene	ND	0.070		µg/L	1	12/28/2013 6:03:46 AM	10981
Chrysene	ND	0.20		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(a)pyrene	ND	0.070		µg/L	1	12/28/2013 6:03:46 AM	10981
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/28/2013 6:03:46 AM	10981
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/28/2013 6:03:46 AM	10981
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/28/2013 6:03:46 AM	10981
Surr: Benzo(e)pyrene	57.0	24.5-139		%REC	1	12/28/2013 6:03:46 AM	10981
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	12	2.0	*	mg/L	20	12/24/2013 3:02:38 PM	R15742
Chloride	130	10		mg/L	20	12/24/2013 3:02:38 PM	R15742
Bromide	0.32	0.10		mg/L	1	12/24/2013 2:25:24 PM	R15742
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/24/2013 2:25:24 PM	R15742
Sulfate	250	10		mg/L	20	12/24/2013 3:02:38 PM	R15742
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/28/2013 2:49:13 AM	R15794

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.050	0.020		mg/L	1	1/7/2014 11:54:32 AM	R15921
Barium	0.13	0.0020		mg/L	1	12/27/2013 2:46:38 PM	R15768
Boron	2.6	0.20		mg/L	5	12/27/2013 2:48:35 PM	R15768
Cadmium	ND	0.0020		mg/L	1	12/27/2013 2:46:38 PM	R15768
Calcium	12	1.0		mg/L	1	12/30/2013 12:41:37 PM	R15805
Cobalt	ND	0.0060		mg/L	1	12/27/2013 2:46:38 PM	R15768
Copper	ND	0.0060		mg/L	1	12/27/2013 2:46:38 PM	R15768
Iron	0.32	0.020	*	mg/L	1	12/30/2013 12:41:37 PM	R15805
Magnesium	ND	1.0		mg/L	1	12/30/2013 12:41:37 PM	R15805
Manganese	0.14	0.0020	*	mg/L	1	12/27/2013 2:46:38 PM	R15768
Molybdenum	0.038	0.0080		mg/L	1	12/27/2013 2:46:38 PM	R15768
Nickel	0.081	0.010		mg/L	1	12/27/2013 2:46:38 PM	R15768
Potassium	22	1.0		mg/L	1	12/30/2013 12:41:37 PM	R15805
Silver	ND	0.0050		mg/L	1	12/27/2013 2:46:38 PM	R15768
Sodium	390	5.0		mg/L	5	12/30/2013 12:47:00 PM	R15805
Zinc	0.022	0.010		mg/L	1	12/27/2013 2:46:38 PM	R15768
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.42	0.020	*	mg/L	20	1/8/2014 2:52:32 PM	R15963
Lead	ND	0.0010		mg/L	1	1/8/2014 2:36:36 PM	R15963
Selenium	ND	0.0010		mg/L	1	1/8/2014 2:36:36 PM	R15963
Uranium	ND	0.0010		mg/L	1	1/8/2014 2:36:36 PM	R15963
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	1/7/2014 2:17:05 PM	11092
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Acenaphthylene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Aniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Anthracene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Azobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benz(a)anthracene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(a)pyrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(b)fluoranthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzo(k)fluoranthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzoic acid	ND	40		µg/L	1	12/26/2013 11:39:34 PM	10980
Benzyl alcohol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001 **Matrix:** AQUEOUS **Received Date:** 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Butyl benzyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Carbazole	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Chloroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Chloronaphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Chlorophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Chrysene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Di-n-butyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Di-n-octyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Dibenzofuran	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,2-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,3-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,4-Dichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Diethyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Dimethyl phthalate	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dichlorophenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dimethylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dinitrophenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,6-Dinitrotoluene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Fluoranthene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Fluorene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachlorobutadiene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Hexachloroethane	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Isophorone	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Methylnaphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Methylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
3+4-Methylphenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001 **Matrix:** AQUEOUS **Received Date:** 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
N-Nitrosodimethylamine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Naphthalene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
3-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Nitroaniline	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Nitrobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
4-Nitrophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Pentachlorophenol	ND	20		µg/L	1	12/26/2013 11:39:34 PM	10980
Phenanthrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Phenol	14	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Pyrene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Pyridine	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/26/2013 11:39:34 PM	10980
Surr: 2-Fluorophenol	60.0	22.7-98		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: Phenol-d5	42.5	23.4-74.9		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: 2,4,6-Tribromophenol	86.1	23.3-111		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: Nitrobenzene-d5	81.0	36.8-111		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: 2-Fluorobiphenyl	82.0	38.3-110		%REC	1	12/26/2013 11:39:34 PM	10980
Surr: 4-Terphenyl-d14	86.7	52.1-116		%REC	1	12/26/2013 11:39:34 PM	10980
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	23	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Toluene	45	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Ethylbenzene	1.3	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,4-Trimethylbenzene	2.7	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Naphthalene	12	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Methylnaphthalene	5.8	4.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Acetone	58	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Bromoform	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Bromomethane	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Butanone	27	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Carbon disulfide	ND	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chloroethane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chloroform	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Chloromethane	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,3-Dichloropropane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
2-Hexanone	ND	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/29/2013 7:47:46 PM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Styrene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: LDG 47-7
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 12/21/2013 1:00:00 PM
Lab ID: 1312B40-001
Matrix: AQUEOUS
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Tetrachloroethene (PCE)	12	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/29/2013 7:47:46 PM	R15774
Xylenes, Total	19	1.5		µg/L	1	12/29/2013 7:47:46 PM	R15774
Surr: 1,2-Dichloroethane-d4	95.2	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
Surr: Dibromofluoromethane	103	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
Surr: Toluene-d8	100	70-130		%REC	1	12/29/2013 7:47:46 PM	R15774
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	12/27/2013	10991
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	36	12		µg/L	5	1/8/2014	11134
SM4500-H+B: PH						Analyst: **JML**	
pH	7.33	1.68	H	pH units	1	12/26/2013 3:28:37 PM	R15744
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	440	20		mg/L CaCO3	1	12/26/2013 3:28:37 PM	R15744
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/26/2013 3:28:37 PM	R15744
Total Alkalinity (as CaCO3)	440	20		mg/L CaCO3	1	12/26/2013 3:28:37 PM	R15744
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1190	40.0	*	mg/L	1	12/27/2013 10:29:00 AM	10984

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1312B40-002
Matrix: TRIP BLANK
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/26/2013 3:55:28 PM	10989
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Toluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Ethylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Naphthalene	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Methylnaphthalene	ND	4.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Acetone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromodichloromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromoform	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Bromomethane	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Butanone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Carbon disulfide	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Carbon Tetrachloride	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chloroethane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chloroform	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Chloromethane	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
4-Chlorotoluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
cis-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Dibromochloromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Dibromomethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1-Dichloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1-Dichloroethene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1312B40-002
Matrix: TRIP BLANK
Received Date: 12/24/2013 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichloropropane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2,2-Dichloropropane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Hexachlorobutadiene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
2-Hexanone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Isopropylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
4-Isopropyltoluene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
4-Methyl-2-pentanone	ND	10		µg/L	1	12/28/2013 8:43:59 AM	R15774
Methylene Chloride	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
n-Butylbenzene	ND	3.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
n-Propylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
sec-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Styrene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
tert-Butylbenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
trans-1,2-DCE	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Trichlorofluoromethane	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Vinyl chloride	ND	1.0		µg/L	1	12/28/2013 8:43:59 AM	R15774
Xylenes, Total	ND	1.5		µg/L	1	12/28/2013 8:43:59 AM	R15774
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774
Surr: Dibromofluoromethane	111	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774
Surr: Toluene-d8	96.5	70-130		%REC	1	12/28/2013 8:43:59 AM	R15774

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

Qualifiers:

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

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131227021
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312B40
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131227021-001	**Sampling Date**	12/21/2013	**Date/Time Received**	12/27/2013 12:23 PM
Client Sample ID	1312B40-001M / LDG 47-7	**Sampling Time**	1:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	1/2/2014	CRW	EPA 335.4	

Sample Number	131227021-002	**Sampling Date**	12/21/2013	**Date/Time Received**	12/27/2013 12:23 PM
Client Sample ID	1312B40-001O / LDG 47-7	**Sampling Time**	1:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	0.243	mg/L	0.01	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B13121948-001
Client Sample ID: 1312B40-001K-L, LDG 47-7

Report Date: 01/09/14
Collection Date: 12/21/13 13:00
DateReceived: 12/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, DISSOLVED							
Lithium	1.0	mg/L		0.1		E200.7	12/30/13 13:27 / rlh
Rubidium	0.24	mg/L		0.01		E200.8	01/09/14 11:38 / jjw
Tungsten	ND	mg/L		0.1		E200.8	01/09/14 11:38 / jjw
RADIONUCLIDES							
Radon 222	-33.4	pCi/L	UH			D5072-92	12/31/13 12:25 / eli-ca
Radon 222 precision (±)	185	pCi/L	H			D5072-92	12/31/13 12:25 / eli-ca
Radon 222 MDC	322	pCi/L	H			D5072-92	12/31/13 12:25 / eli-ca

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Report Date: 01/09/14
Project: Not Indicated
Work Order: B13121948

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_131230A	
Sample ID: ICV		Continuing Calibration Verification Standard							12/30/13 10:48	
Lithium		1.20	mg/L	0.10	96	95	105			
Method: E200.7									Batch: R217135	
Sample ID: MB-6500DIS131230A		Method Blank				Run: ICP203-B_131230A			12/30/13 11:11	
Lithium		ND	mg/L	0.0003						
Sample ID: LFB-6500DIS131230A		Laboratory Fortified Blank				Run: ICP203-B_131230A			12/30/13 11:15	
Lithium		1.02	mg/L	0.10	102	85	115			
Sample ID: B13121948-001AMS2		Sample Matrix Spike				Run: ICP203-B_131230A			12/30/13 13:35	
Lithium		6.00	mg/L	0.10	101	70	130			
Sample ID: B13121948-001AMSD2		Sample Matrix Spike Duplicate				Run: ICP203-B_131230A			12/30/13 13:38	
Lithium		6.30	mg/L	0.10	107	70	130	4.8	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Report Date: 01/09/14
Project: Not Indicated
Work Order: B13121948

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS203-B_140109A	
Sample ID: QCS-	2	Initial Calibration Verification Standard							01/09/14 09:38	
Rubidium		0.0527	mg/L	0.010	105	90	110			
Tungsten		0.0526	mg/L	0.10	105	90	110			
Method: E200.8									Batch: R217575	
Sample ID: LFB	2	Laboratory Fortified Blank				Run: ICPMS203-B_140109A			01/09/14 09:54	
Rubidium		0.0492	mg/L	0.010	98	85	115			
Tungsten		0.0508	mg/L	0.10	102	85	115			
Sample ID: LRB	2	Method Blank				Run: ICPMS203-B_140109A			01/09/14 10:22	
Rubidium		ND	mg/L	0.001						
Tungsten		ND	mg/L	0.001						
Sample ID: B13121948-001AMS	2	Sample Matrix Spike				Run: ICPMS203-B_140109A			01/09/14 11:54	
Rubidium		0.186	mg/L	0.010		70	130			A
Tungsten		0.141	mg/L	0.10	137	70	130			S
Sample ID: B13121948-001AMSD	2	Sample Matrix Spike Duplicate				Run: ICPMS203-B_140109A			01/09/14 11:58	
Rubidium		0.183	mg/L	0.010		70	130	1.5	20	A
Tungsten		0.138	mg/L	0.10	131	70	130	2.1	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 01/02/14
Work Order: B13121948

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92									Batch: R182194
Sample ID: B13121948-001BDUP	Sample Duplicate				Run: PACKARD 3100TR_131231A				12/31/13 12:25
Radon 222	53.2	pCi/L					870	20	UR
Radon 222 precision (±)	187	pCi/L							
Radon 222 MDC	322	pCi/L							
- The Sample and the Duplicate are both below the MDC. The RPD is acceptable.									
Sample ID: MB-R182194	Method Blank				Run: PACKARD 3100TR_131231A				12/31/13 12:25
Radon 222	10	pCi/L							U
Radon 222 precision (±)	30	pCi/L							
Radon 222 MDC	50	pCi/L							
Sample ID: LCS-R182194	Laboratory Control Sample				Run: PACKARD 3100TR_131231A				12/31/13 12:25
Radon 222	548	pCi/L		94	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312B40
Pace Project No.: 30110466

Sample: 1312B40-001 LDG 47-7 **Lab ID: 30110466001** Collected: 12/21/13 13:00 Received: 12/27/13 09:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0340 ± 0.481 (0.981)**	pCi/L	01/10/14 16:13	13982-63-3	
Radium-228	EPA 904.0	**-0.191 ± 0.378 (0.924)**	pCi/L	01/14/14 15:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312B40
Pace Project No.: 30110466

QC Batch: RADC/18217
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30110466001

METHOD BLANK: 675523
Matrix: Water
Associated Lab Samples: 30110466001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.139 ± 0.532 (0.990)	pCi/L	01/10/14 15:26	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312B40
Pace Project No.: 30110466

QC Batch: RADC/18211
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30110466001

METHOD BLANK: 675092
Matrix: Water
Associated Lab Samples: 30110466001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.120 ± 0.275 (0.611)	pCi/L	01/14/14 11:53	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15768**	RunNo: **15768**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Cobalt	0.51	0.0060	0.5000	0	101	85	115			
Copper	0.51	0.0060	0.5000	0	102	85	115			
Manganese	0.53	0.0020	0.5000	0	105	85	115			
Molybdenum	0.52	0.0080	0.5000	0	103	85	115			
Nickel	0.50	0.010	0.5000	0	99.4	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	103	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456073** 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								

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456074** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	85	115			
Iron	0.54	0.020	0.5000	0	107	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID **1312B40-001JMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LDG 47-7**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456137** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	61	1.0	50.00	12.45	96.3	70	130			
Iron	0.81	0.020	0.5000	0.3210	96.9	70	130			
Magnesium	49	1.0	50.00	0.5473	96.3	70	130			
Potassium	70	1.0	50.00	21.92	96.5	70	130			

ample ID **1312B40-001JMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
lient ID: **LDG 47-7**	Batch ID: **R15805**	RunNo: **15805**
Prep Date:	Analysis Date: **12/30/2013**	SeqNo: **456138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	60	1.0	50.00	12.45	95.0	70	130	1.05	20	
Iron	0.81	0.020	0.5000	0.3210	98.2	70	130	0.793	20	
Magnesium	48	1.0	50.00	0.5473	95.2	70	130	1.17	20	
Potassium	70	1.0	50.00	21.92	95.2	70	130	0.905	20	

Sample ID **1312B40-001JMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LDG 47-7**	Batch ID: **R15921**	RunNo: **15921**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459107** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.63	0.020	0.5000	0.04959	116	70	130			

Sample ID **1312B40-001JMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LDG 47-7**	Batch ID: **R15921**	RunNo: **15921**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459108** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.64	0.020	0.5000	0.04959	118	70	130	2.02	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15921**	RunNo: **15921**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15921**	RunNo: **15921**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459139** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	111	85	115			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.7	85	115			
Lead	0.026	0.0010	0.02500	0	104	85	115			
Selenium	0.023	0.0010	0.02500	0	93.5	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15963**	RunNo: **15963**
Prep Date:	Analysis Date: **1/8/2014**	SeqNo: **460079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-11092**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **11092**	RunNo: **15947**
Prep Date: **1/6/2014**	Analysis Date: **1/7/2014**	SeqNo: **459682** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-11092**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **11092**	RunNo: **15947**
Prep Date: **1/6/2014**	Analysis Date: **1/7/2014**	SeqNo: **459683** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBW** Batch ID: **R15742** RunNo: **15742**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **454474** Units: **mg/L**

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

Sample ID **LCS-b** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSW** Batch ID: **R15742** RunNo: **15742**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **454478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.7	0.50	5.000	0	94.1	90	110			
Bromide	2.5	0.10	2.500	0	98.7	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	95.0	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

ample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15742** RunNo: **15742**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **454484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.7	0.10	1.600	0	108	90	110			
Chloride	7.9	0.50	8.000	0	98.4	90	110			
Bromide	8.1	0.10	8.000	0	101	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.4	90	110			
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15742** RunNo: **15742**

Prep Date: Analysis Date: **12/24/2013** SeqNo: **454496** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	109	90	110			
Chloride	4.8	0.50	5.000	0	95.6	90	110			
Bromide	5.0	0.10	5.000	0	99.4	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.7	90	110			
Sulfate	12	0.50	12.50	0	97.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1312B40-001GMS** SampType: **MS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LDG 47-7** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454504** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.8	0.10	2.500	0.3221	99.7	85.9	111			

Sample ID **1312B40-001GMSD** SampType: **MSD** TestCode: **EPA Method 300.0: Anions**
Client ID: **LDG 47-7** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454505** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.8	0.10	2.500	0.3221	100	85.9	111	0.397	20	

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454508** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.8	0.10	1.600	0	109	90	110			
Chloride	8.0	0.50	8.000	0	99.5	90	110			
Bromide	8.1	0.10	8.000	0	101	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.9	90	110			
Sulfate	20	0.50	20.00	0	101	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15742** RunNo: **15742**
Prep Date: Analysis Date: **12/24/2013** SeqNo: **454513** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	107	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			
Bromide	5.0	0.10	5.000	0	100	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.9	90	110			
Sulfate	12	0.50	12.50	0	97.8	90	110			

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15794** RunNo: **15794**
Prep Date: Analysis Date: **12/27/2013** SeqNo: **455808** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	13	0.20	12.00	0	106	90	110			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455810** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.6	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455820** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.9	0.20	5.000	0	98.0	90	110			

~ample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
lient ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455832** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.1	0.20	8.000	0	102	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455844** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.9	0.20	5.000	0	98.2	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455883** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.1	0.20	8.000	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/28/2013**	SeqNo: **455895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.9	0.20	5.000	0	97.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/28/2013**	SeqNo: **455907** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	7.9	0.20	8.000	0	99.2	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15794**	RunNo: **15794**
Prep Date:	Analysis Date: **12/28/2013**	SeqNo: **455915** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10991**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10991**	RunNo: **15761**
Prep Date: **12/26/2013**	Analysis Date: **12/27/2013**	SeqNo: **454975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10991**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10991**	RunNo: **15761**
Prep Date: **12/26/2013**	Analysis Date: **12/27/2013**	SeqNo: **454976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.3	1.0	5.000	0	106	80	120			

Sample ID **LCSD-10991**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10991**	RunNo: **15761**
Prep Date: **12/26/2013**	Analysis Date: **12/27/2013**	SeqNo: **454977** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.4	1.0	5.000	0	108	80	120	2.24	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10989**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10989**	RunNo: **15731**
Prep Date: **12/26/2013**	Analysis Date: **12/26/2013**	SeqNo: **454148** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10989**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10989**	RunNo: **15731**
Prep Date: **12/26/2013**	Analysis Date: **12/26/2013**	SeqNo: **454165** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10979**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/29/2013**	SeqNo: **455290** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		82.4	17	123			
Surr: Tetrachloro-m-xylene	2.0		2.500		81.6	22.6	113			

Sample ID **LCS-10979**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10979**	RunNo: **15776**
Prep Date: **12/24/2013**	Analysis Date: **12/31/2013**	SeqNo: **456267** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
ˈclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
ˌclor 1260	3.7	1.0	5.000	0	74.1	35.7	137			
ɜurr: Decachlorobiphenyl	2.8		2.500		113	17	123			
Surr: Tetrachloro-m-xylene	2.9		2.500		116	22.6	113			S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
ans-1,2-DCE	ND	1.0								
is-1,3-Dichloropropene	ND	1.0								
,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	99.3	82.2	124			
Chlorobenzene	19	1.0	20.00	0	94.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455191** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	116	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	91.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
'-propylbenzene	ND	1.0								
opropyltoluene	ND	1.0								
Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **b5**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455218** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15774**	RunNo: **15774**
Prep Date:	Analysis Date: **12/27/2013**	SeqNo: **455220** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	95.1	82.2	124			
Chlorobenzene	19	1.0	20.00	0	93.5	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	93.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
romophenyl phenyl ether	ND	10								
tyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10980**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		55.1	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	23.3	111			
Surr: Nitrobenzene-d5	69		100.0		68.8	36.8	111			
Surr: 2-Fluorobiphenyl	71		100.0		70.6	38.3	110			
Surr: 4-Terphenyl-d14	77		100.0		77.5	52.1	116			

Qualifiers:

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- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcs-10980**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	65.8	48	101			
4-Chloro-3-methylphenol	130	10	200.0	0	66.5	47.9	109			
2-Chlorophenol	120	10	200.0	0	59.5	40	105			
1,4-Dichlorobenzene	57	10	100.0	0	57.2	40.8	94.3			
2,4-Dinitrotoluene	64	10	100.0	0	64.1	28.3	131			
N-Nitrosodi-n-propylamine	66	10	100.0	0	65.6	46.2	119			
4-Nitrophenol	44	10	200.0	0	21.9	10.5	67.9			
Pentachlorophenol	53	20	200.0	0	26.7	22.4	81.1			
Phenol	73	10	200.0	0	36.7	21.4	72.9			
Pyrene	61	10	100.0	0	60.9	46.9	109			
1,2,4-Trichlorobenzene	55	10	100.0	0	54.6	43.1	98.4			
Surr: 2-Fluorophenol	94		200.0		47.1	22.7	98			
Surr: Phenol-d5	72		200.0		36.0	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	60		100.0		59.7	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		67.9	38.3	110			
Surr: 4-Terphenyl-d14	72		100.0		71.6	52.1	116			

Sample ID **lcsd-10980**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	48	101	13.8	25	
4-Chloro-3-methylphenol	150	10	200.0	0	74.3	47.9	109	11.1	32.7	
2-Chlorophenol	120	10	200.0	0	62.4	40	105	4.89	20	
1,4-Dichlorobenzene	60	10	100.0	0	60.1	40.8	94.3	4.94	20	
2,4-Dinitrotoluene	68	10	100.0	0	68.5	28.3	131	6.64	29.9	
N-Nitrosodi-n-propylamine	69	10	100.0	0	69.0	46.2	119	5.17	23.1	
4-Nitrophenol	48	10	200.0	0	24.0	10.5	67.9	8.93	40.5	
Pentachlorophenol	70	20	200.0	0	35.0	22.4	81.1	27.2	37.3	
Phenol	77	10	200.0	0	38.4	21.4	72.9	4.45	20	
Pyrene	74	10	100.0	0	73.8	46.9	109	19.2	26.5	
1,2,4-Trichlorobenzene	59	10	100.0	0	59.4	43.1	98.4	8.32	27.2	
Surr: 2-Fluorophenol	92		200.0		45.9	22.7	98	0	0	
Surr: Phenol-d5	74		200.0		36.8	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		70.5	23.3	111	0	0	
Surr: Nitrobenzene-d5	63		100.0		62.9	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	73		100.0		72.6	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcsd-10980**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10980**	RunNo: **15747**
Prep Date: **12/24/2013**	Analysis Date: **12/26/2013**	SeqNo: **454622** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	81		100.0		80.5	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312B40**

'all Environmental Analysis Laboratory, Inc.

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10981**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	22		20.00		108	24.5	139			

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	0	53.2	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	45.1	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	41.9	36.6	89.6			
Acenaphthylene	47	2.5	80.20	0	58.3	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.6	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.4	0.60	4.020	0	60.4	43.9	111			
Anthracene	2.3	0.60	4.020	0	57.2	44.3	103			
Fluoranthene	4.5	0.30	8.020	0	56.2	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.2	32.6	103			
Benz(a)anthracene	0.47	0.070	0.8020	0	58.6	43	114			
Chrysene	2.2	0.20	4.020	0	55.2	40.2	100			
Benzo(b)fluoranthene	0.59	0.10	1.002	0	58.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS-10981**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10981**	RunNo: **15775**
Prep Date: **12/24/2013**	Analysis Date: **12/27/2013**	SeqNo: **455253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.30	0.070	0.5020	0	59.8	34.5	118			
Dibenz(a,h)anthracene	0.60	0.12	1.002	0	59.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	42.4	113			
Surr: Benzo(e)pyrene	16		20.00		77.8	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

Vall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-11134**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459499** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-11134**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	110	73.7	135			

Sample ID **LCSD-11134**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSS02**	Batch ID: **11134**	RunNo: **15937**
Prep Date: **1/8/2014**	Analysis Date: **1/8/2014**	SeqNo: **459505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	73.7	135	17.9	21.4	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-1**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454539** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R15744**	RunNo: **15744**
Prep Date:	Analysis Date: **12/26/2013**	SeqNo: **454540** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312B40**

16-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10984**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454897** 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-10984**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10984**	RunNo: **15756**
Prep Date: **12/25/2013**	Analysis Date: **12/27/2013**	SeqNo: **454898** 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.
-) Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312B40 | RcptNo: 1

Received by/date: MG 12/24/13

Logged By: Michelle Garcia 12/24/2013 10:30:00 AM Michelle Garcia

Completed By: Michelle Garcia 12/24/2013 12:30:27 PM Michelle Garcia

Reviewed By: TO 12/24/2013

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 9 (<2 or >12 unless noted)

Adjusted? NO

Checked by:

Special Handling (if applicable)

16. 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: ____

17. Additional remarks: As per analyst request, poured off from unpreserved sample, filtered, and preserved for additional volume for dissolved metals on 1/8/14. lcm.

18. Cooler Information

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

Chain-of-Custody Record

Client: AMEC

Mailing Address: 8519 Jefferson St NE
Albuquerque NM 87113

Phone #: 505.821.1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) Excel per DJ 01/06/14

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Lightning Dock Geothermal GW Quality Monitoring

Project #: 11-517-00102.06

Project Manager: David Janney

Sampler: Charles D. Guilly

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0c

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. 1312846	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12/21/13	1300 MST	Water	LDG 47-7	21		-001																
			Trip Blank	3																		
			Note: 2 x 125 HNO_3 samples (Dissolved Metals) were not filtered.																			

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/23/13	10:10a	Charles D. Guilly		12/24/13	1030
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: See attached analyte list.

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.

12/02/13 /AT
Use this list

CYRQ ENERGY WQCC BOTTLES FOR 1 SAMPLE

TEST	BOTTLE TYPE/PRESERVATIVE
8260	3 x 40 ml HCl Voa's
EDB-504.1	2 x 40 ml voa's Na2S203
1082-PCB	1 x ltr unpreserved amber
8310-PAH	1 x ltr unpreserved amber
8270-SV0C	1 x ltr unpreserved amber
Phenols	1 x ltr H2S04 amber
Anions, TDS, pH, SO4, Cl, PSO4, Carbonate, Bicarbonate, Total Alk TDS, PH	1 x 500 unpreserved plastic 1 x 125 H2S04 plastic
Mercury	1 x 500 HN03 plastic
Dissolved Metals/Cations l, As, Ag, B, Ba, Br, Cd, Cu, Co, Fe, F, / Ca, Na, K, P g, Li, Mn, Mg, Mo, Ni, Pb, Se, Ru, W, Zn, U	2 x 125 HN03 plastic
18.1 TPH	1 x 500 HCl amber
otal Phosphorus	Ask Hall
Radon	"
Y N	"
adium 226/228	"

Note Li, Ru, W on COC

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 16, 2013

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113
TEL: (505) 796-7276
FAX (505) 821-7371

RE: Lightning Dock Geothermal Water Quality Monitoring OrderNo.: 1311B14

Dear David Janney:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/26/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE
Albuquerque, NM 87109
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Case Narrative

WO#: **1311B14**
Date: **12/16/2013**

CLIENT: AMEC
Project: Lightning Dock Geothermal Water Quality Moni

Analytical Notes Regarding EPA Method 418.1:
Sample MW-3 The addition of silica gel to the sample extract is performed to remove the grease portion in the sample result. The extract went through 10 silica gel steps before running out of extract. The sample result of 1.1mg/L is likely to be non petroleum related hydrocarbons. The sample result should be considered estimated.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 2:16:33 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:16:33 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:16:33 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 2:16:33 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 2:16:33 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 2:16:33 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 2:16:33 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 2:16:33 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 2:16:33 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 2:16:33 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 2:16:33 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 2:16:33 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 2:16:33 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 2:16:33 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 2:16:33 PM	10572
Surr: Benzo(e)pyrene	107	24.5-139		%REC	1	12/3/2013 2:16:33 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	7.7	0.50	*	mg/L	5	11/26/2013 6:48:08 PM	R15112
Chloride	100	10		mg/L	20	11/26/2013 7:00:33 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 6:48:08 PM	R15112
Nitrogen, Nitrate (As N)	2.6	0.50		mg/L	5	11/26/2013 6:48:08 PM	R15112
Phosphorus, Orthophosphate (As P	ND	2.5		mg/L	5	11/26/2013 6:48:08 PM	R15112
Sulfate	670	10	*	mg/L	20	11/26/2013 7:00:33 PM	R15112
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.034	0.020		mg/L	1	12/4/2013 6:20:46 PM	R15245
Barium	0.063	0.0020		mg/L	1	12/4/2013 6:20:46 PM	R15245
Boron	0.70	0.20		mg/L	5	12/4/2013 6:32:25 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 6:20:46 PM	R15245
Calcium	51	1.0		mg/L	1	12/4/2013 6:20:46 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 6:20:46 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 6:20:46 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:37:05 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:37:05 PM	R15267
Magnesium	2.1	1.0		mg/L	1	12/4/2013 6:20:46 PM	R15245
Manganese	0.21	0.0020	*	mg/L	1	12/4/2013 6:20:46 PM	R15245

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.058	0.0080		mg/L	1	12/4/2013 6:20:46 PM	R15245
Nickel	ND	0.010		mg/L	1	12/4/2013 6:20:46 PM	R15245
Potassium	22	1.0		mg/L	1	12/4/2013 6:20:46 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 6:20:46 PM	R15245
Sodium	400	5.0		mg/L	5	12/4/2013 6:32:25 PM	R15245
Zinc	ND	0.010		mg/L	1	12/5/2013 1:37:05 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0055	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
Selenium	0.0052	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
Uranium	0.011	0.0010		mg/L	1	12/10/2013 2:05:58 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.00079	0.00020		mg/L	1	12/4/2013 5:46:41 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 2:02:14 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 2:02:14 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:02:14 PM	10570
Surr: 2-Fluorophenol	44.5	22.7-98		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: Phenol-d5	34.1	23.4-74.9		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: 2,4,6-Tribromophenol	63.1	23.3-111		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: Nitrobenzene-d5	52.3	36.8-111		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: 2-Fluorobiphenyl	60.7	38.3-110		%REC	1	12/2/2013 2:02:14 PM	10570
Surr: 4-Terphenyl-d14	64.5	52.1-116		%REC	1	12/2/2013 2:02:14 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chloroform	28	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 4:26:34 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 4:26:34 PM	R15104

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

Qualifiers:

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

Analytical Report
Lab Order **1311B14**
Date Reported: **12/16/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 11:45:00 AM
Lab ID: 1311B14-001
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 4:26:34 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 4:26:34 PM	R15104
Surr: 1,2-Dichloroethane-d4	95.9	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
Surr: Dibromofluoromethane	103	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
Surr: Toluene-d8	96.6	70-130		%REC	1	11/26/2013 4:26:34 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.1		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2000	0.010		µmhos/cm	1	11/27/2013 8:57:38 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.69	1.68	H	pH units	1	11/27/2013 8:57:38 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	220	20		mg/L CaCO3	1	11/27/2013 8:57:38 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 8:57:38 PM	R15156
Total Alkalinity (as CaCO3)	220	20		mg/L CaCO3	1	11/27/2013 8:57:38 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1780	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002 **Matrix:** AQUEOUS **Received Date:** 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 2:45:54 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:45:54 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 2:45:54 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 2:45:54 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 2:45:54 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 2:45:54 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 2:45:54 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 2:45:54 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 2:45:54 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 2:45:54 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 2:45:54 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 2:45:54 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 2:45:54 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 2:45:54 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 2:45:54 PM	10572
Surr: Benzo(e)pyrene	135	24.5-139		%REC	1	12/3/2013 2:45:54 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	11	0.50	*	mg/L	5	11/26/2013 7:12:58 PM	R15112
Chloride	96	2.5		mg/L	5	11/26/2013 7:12:58 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 7:12:58 PM	R15112
Nitrogen, Nitrate (As N)	3.1	0.50		mg/L	5	11/26/2013 7:12:58 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	11/26/2013 7:12:58 PM	R15112
Sulfate	510	10	*	mg/L	20	11/26/2013 7:25:22 PM	R15112
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.049	0.020		mg/L	1	12/4/2013 6:43:12 PM	R15245
Barium	0.044	0.0020		mg/L	1	12/4/2013 6:43:12 PM	R15245
Boron	0.37	0.040		mg/L	1	12/4/2013 6:43:12 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 6:43:12 PM	R15245
Calcium	26	1.0		mg/L	1	12/4/2013 6:43:12 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 6:43:12 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 6:43:12 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:39:03 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:39:03 PM	R15267
Magnesium	ND	1.0		mg/L	1	12/4/2013 6:43:12 PM	R15245
Manganese	0.041	0.0020		mg/L	1	12/4/2013 6:43:12 PM	R15245

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.027	0.0080		mg/L	1	12/4/2013 6:43:12 PM	R15245
Nickel	ND	0.010		mg/L	1	12/4/2013 6:43:12 PM	R15245
Potassium	14	1.0		mg/L	1	12/4/2013 6:43:12 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 6:43:12 PM	R15245
Sodium	310	5.0		mg/L	5	12/4/2013 6:46:59 PM	R15245
Zinc	0.015	0.010		mg/L	1	12/5/2013 1:39:03 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0082	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
Selenium	0.0035	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
Uranium	ND	0.0010		mg/L	1	12/10/2013 2:11:18 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/4/2013 5:48:29 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 2:31:05 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 2:31:05 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:31:05 PM	10570
Surr: 2-Fluorophenol	57.6	22.7-98		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: Phenol-d5	42.0	23.4-74.9		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: 2,4,6-Tribromophenol	78.5	23.3-111		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: Nitrobenzene-d5	69.9	36.8-111		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: 2-Fluorobiphenyl	69.2	38.3-110		%REC	1	12/2/2013 2:31:05 PM	10570
Surr: 4-Terphenyl-d14	78.5	52.1-116		%REC	1	12/2/2013 2:31:05 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chloroform	4.9	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 5:53:08 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 5:53:08 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:00:00 AM
Lab ID: 1311B14-002
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 5:53:08 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 5:53:08 PM	R15104
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
Surr: Dibromofluoromethane	103	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
Surr: Toluene-d8	100	70-130		%REC	1	11/26/2013 5:53:08 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.2		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	1600	0.010		µmhos/cm	1	11/27/2013 9:09:43 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.60	1.68	H	pH units	1	11/27/2013 9:09:43 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:09:43 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:09:43 PM	R15156
Total Alkalinity (as CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:09:43 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1380	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 3:15:15 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:15:15 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:15:15 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 3:15:15 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 3:15:15 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 3:15:15 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 3:15:15 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 3:15:15 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 3:15:15 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 3:15:15 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 3:15:15 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 3:15:15 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 3:15:15 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 3:15:15 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 3:15:15 PM	10572
Surr: Benzo(e)pyrene	112	24.5-139		%REC	1	12/3/2013 3:15:15 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	11	0.50	*	mg/L	5	11/26/2013 7:37:47 PM	R15112
Chloride	96	2.5		mg/L	5	11/26/2013 7:37:47 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 7:37:47 PM	R15112
Nitrogen, Nitrate (As N)	3.2	0.50		mg/L	5	11/26/2013 7:37:47 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	11/26/2013 7:37:47 PM	R15112
Sulfate	510	10	*	mg/L	20	11/26/2013 7:50:11 PM	R15112
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.024	0.020		mg/L	1	12/4/2013 6:55:38 PM	R15245
Barium	0.043	0.0020		mg/L	1	12/4/2013 6:55:38 PM	R15245
Boron	0.36	0.040		mg/L	1	12/4/2013 6:55:38 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 6:55:38 PM	R15245
Calcium	26	1.0		mg/L	1	12/4/2013 6:55:38 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 6:55:38 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 6:55:38 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:40:57 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:40:57 PM	R15267
Magnesium	ND	1.0		mg/L	1	12/4/2013 6:55:38 PM	R15245
Manganese	0.036	0.0020		mg/L	1	12/4/2013 6:55:38 PM	R15245

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.026	0.0080		mg/L	1	12/4/2013 6:55:38 PM	R15245
Nickel	ND	0.010		mg/L	1	12/4/2013 6:55:38 PM	R15245
Potassium	15	1.0		mg/L	1	12/4/2013 6:55:38 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 6:55:38 PM	R15245
Sodium	310	5.0		mg/L	5	12/4/2013 6:59:27 PM	R15245
Zinc	ND	0.010		mg/L	1	12/5/2013 1:40:57 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0083	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
Selenium	0.0035	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
Uranium	ND	0.0010		mg/L	1	12/10/2013 2:13:58 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/4/2013 5:53:59 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 2:59:56 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 2:59:56 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 2:59:56 PM	10570
Surr: 2-Fluorophenol	38.8	22.7-98		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: Phenol-d5	29.9	23.4-74.9		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: 2,4,6-Tribromophenol	65.6	23.3-111		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: Nitrobenzene-d5	49.1	36.8-111		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: 2-Fluorobiphenyl	51.5	38.3-110		%REC	1	12/2/2013 2:59:56 PM	10570
Surr: 4-Terphenyl-d14	75.9	52.1-116		%REC	1	12/2/2013 2:59:56 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chloroform	5.2	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 6:50:39 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 6:50:39 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/25/2013 9:30:00 AM
Lab ID: 1311B14-003
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 6:50:39 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 6:50:39 PM	R15104
Surr: 1,2-Dichloroethane-d4	98.0	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
Surr: Dibromofluoromethane	100	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
Surr: Toluene-d8	93.7	70-130		%REC	1	11/26/2013 6:50:39 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.1		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	1500	0.010		µmhos/cm	1	11/27/2013 9:17:47 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.58	1.68	H	pH units	1	11/27/2013 9:17:47 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:17:47 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:17:47 PM	R15156
Total Alkalinity (as CaCO3)	72	20		mg/L CaCO3	1	11/27/2013 9:17:47 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1210	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 3:44:29 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:44:29 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 3:44:29 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 3:44:29 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 3:44:29 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 3:44:29 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 3:44:29 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 3:44:29 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 3:44:29 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 3:44:29 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 3:44:29 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 3:44:29 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 3:44:29 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 3:44:29 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 3:44:29 PM	10572
Surr: Benzo(e)pyrene	136	24.5-139		%REC	1	12/3/2013 3:44:29 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	12	0.50	*	mg/L	5	11/26/2013 8:27:26 PM	R15112
Chloride	94	10		mg/L	20	11/26/2013 8:39:50 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 8:27:26 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	11/26/2013 8:27:26 PM	R15112
Sulfate	540	10	*	mg/L	20	11/26/2013 8:39:50 PM	R15112
Nitrate+Nitrite as N	2.1	1.0		mg/L	5	12/7/2013 3:55:41 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.31	0.020	*	mg/L	1	12/4/2013 7:17:10 PM	R15245
Barium	0.060	0.0020		mg/L	1	12/4/2013 7:17:10 PM	R15245
Boron	0.44	0.040		mg/L	1	12/4/2013 7:17:10 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:17:10 PM	R15245
Calcium	24	1.0		mg/L	1	12/4/2013 7:17:10 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:17:10 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:17:10 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:42:50 PM	R15267
Iron	0.24	0.020		mg/L	1	12/5/2013 1:42:50 PM	R15267
Magnesium	ND	1.0		mg/L	1	12/4/2013 7:17:10 PM	R15245
Manganese	0.18	0.0020	*	mg/L	1	12/4/2013 7:17:10 PM	R15245

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- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- P Sample pH greater than 2 for VOA and TOC only.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.065	0.0080		mg/L	1	12/4/2013 7:17:10 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:42:50 PM	R15267
Potassium	17	1.0		mg/L	1	12/4/2013 7:17:10 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:17:10 PM	R15245
Sodium	330	5.0		mg/L	5	12/4/2013 7:21:02 PM	R15245
Zinc	ND	0.010		mg/L	1	12/5/2013 1:42:50 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.019	0.0010	*	mg/L	1	12/10/2013 2:22:00 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:22:00 PM	R15392
Selenium	0.0034	0.0010		mg/L	1	12/10/2013 2:22:00 PM	R15392
Uranium	ND	0.0010		mg/L	1	12/10/2013 2:22:00 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.00034	0.00020		mg/L	1	12/4/2013 5:55:47 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzoic acid	41	40		µg/L	1	12/2/2013 3:28:59 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570

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- H Holding times for preparation or analysis exceeded
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- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 3:28:59 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:28:59 PM	10570
Surr: 2-Fluorophenol	39.0	22.7-98		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: Phenol-d5	30.9	23.4-74.9		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: 2,4,6-Tribromophenol	64.6	23.3-111		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: Nitrobenzene-d5	50.6	36.8-111		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: 2-Fluorobiphenyl	59.8	38.3-110		%REC	1	12/2/2013 3:28:59 PM	10570
Surr: 4-Terphenyl-d14	59.8	52.1-116		%REC	1	12/2/2013 3:28:59 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Toluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Ethylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,4-Trimethylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,3,5-Trimethylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Naphthalene	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
1-Methylnaphthalene	ND	40		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Methylnaphthalene	ND	40		µg/L	10	11/26/2013 7:19:21 PM	R15104
Acetone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromodichloromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromoform	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Bromomethane	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Butanone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Carbon disulfide	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Carbon Tetrachloride	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chloroethane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chloroform	21	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Chloromethane	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Chlorotoluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
cis-1,2-DCE	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
cis-1,3-Dichloropropene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
Dibromochloromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Dibromomethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,3-Dichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,4-Dichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Dichlorodifluoromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1-Dichloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1-Dichloroethene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2-Dichloropropane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,3-Dichloropropane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
2,2-Dichloropropane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1-Dichloropropene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Hexachlorobutadiene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
2-Hexanone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Isopropylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
4-Isopropyltoluene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
4-Methyl-2-pentanone	ND	100		µg/L	10	11/26/2013 7:19:21 PM	R15104
Methylene Chloride	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
n-Butylbenzene	ND	30		µg/L	10	11/26/2013 7:19:21 PM	R15104
n-Propylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
sec-Butylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Styrene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
tert-Butylbenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104
Tetrachloroethene (PCE)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
trans-1,2-DCE	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
trans-1,3-Dichloropropene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,3-Trichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,4-Trichlorobenzene	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,1-Trichloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,1,2-Trichloroethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Trichloroethene (TCE)	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Trichlorofluoromethane	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
1,2,3-Trichloropropane	ND	20		µg/L	10	11/26/2013 7:19:21 PM	R15104

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 5:50:00 PM
Lab ID: 1311B14-004
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	10		µg/L	10	11/26/2013 7:19:21 PM	R15104
Xylenes, Total	ND	15		µg/L	10	11/26/2013 7:19:21 PM	R15104
Surr: 1,2-Dichloroethane-d4	93.0	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
Surr: 4-Bromofluorobenzene	103	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
Surr: Dibromofluoromethane	98.0	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
Surr: Toluene-d8	98.6	70-130		%REC	10	11/26/2013 7:19:21 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	1.1	1.1	E	mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	1600	0.010		µmhos/cm	1	11/27/2013 9:25:49 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	8.00	1.68	H	pH units	1	11/27/2013 9:25:49 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	47	20		mg/L CaCO3	1	11/27/2013 9:25:49 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:25:49 PM	R15156
Total Alkalinity (as CaCO3)	47	20		mg/L CaCO3	1	11/27/2013 9:25:49 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1380	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 4:43:01 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 4:43:01 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 4:43:01 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 4:43:01 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 4:43:01 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 4:43:01 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 4:43:01 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 4:43:01 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 4:43:01 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 4:43:01 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 4:43:01 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 4:43:01 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 4:43:01 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 4:43:01 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 4:43:01 PM	10572
Surr: Benzo(e)pyrene	63.4	24.5-139		%REC	1	12/3/2013 4:43:01 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	4.3	2.0	*	mg/L	20	11/26/2013 9:04:40 PM	R15112
Chloride	710	25	*	mg/L	50	11/27/2013 7:56:32 PM	R15178
Bromide	2.2	0.10		mg/L	1	12/7/2013 5:22:32 AM	R15322
Phosphorus, Orthophosphate (As P	ND	2.5	H	mg/L	5	12/9/2013 10:24:41 PM	R15376
Sulfate	1200	25	*	mg/L	50	11/27/2013 7:56:32 PM	R15178
Nitrate+Nitrite as N	12	2.0	*	mg/L	10	12/7/2013 4:08:05 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	ND	0.020		mg/L	1	12/4/2013 7:24:33 PM	R15245
Barium	0.059	0.0020		mg/L	1	12/4/2013 7:24:33 PM	R15245
Boron	0.22	0.040		mg/L	1	12/4/2013 7:24:33 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:24:33 PM	R15245
Calcium	200	5.0		mg/L	5	12/4/2013 7:28:19 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:24:33 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:24:33 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:44:48 PM	R15267
Iron	ND	0.020		mg/L	1	12/5/2013 1:44:48 PM	R15267
Magnesium	14	1.0		mg/L	1	12/4/2013 7:24:33 PM	R15245
Manganese	0.15	0.0020	*	mg/L	1	12/4/2013 7:24:33 PM	R15245

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Hall Environmental Analysis Laboratory, Inc.

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Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.014	0.0080		mg/L	1	12/4/2013 7:24:33 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:44:48 PM	R15267
Potassium	40	1.0		mg/L	1	12/4/2013 7:24:33 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:24:33 PM	R15245
Sodium	860	20		mg/L	20	12/5/2013 1:46:49 PM	R15267
Zinc	0.048	0.010		mg/L	1	12/5/2013 1:44:48 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.012	0.0010	*	mg/L	1	12/10/2013 2:24:39 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:24:39 PM	R15392
Selenium	0.033	0.0010		mg/L	1	12/10/2013 2:24:39 PM	R15392
Uranium	0.0051	0.0010		mg/L	1	12/10/2013 2:24:39 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	ND	0.00020		mg/L	1	12/4/2013 5:57:38 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 3:57:51 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570

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Hall Environmental Analysis Laboratory, Inc.

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Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570

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CLIENT: AMEC
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Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 3:57:51 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 3:57:51 PM	10570
Surr: 2-Fluorophenol	46.2	22.7-98		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: Phenol-d5	36.4	23.4-74.9		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: 2,4,6-Tribromophenol	69.4	23.3-111		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: Nitrobenzene-d5	53.3	36.8-111		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: 2-Fluorobiphenyl	63.4	38.3-110		%REC	1	12/2/2013 3:57:51 PM	10570
Surr: 4-Terphenyl-d14	68.5	52.1-116		%REC	1	12/2/2013 3:57:51 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104

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Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 8:16:46 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 8:16:46 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 2:35:00 PM
Lab ID: 1311B14-005
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 8:16:46 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 8:16:46 PM	R15104
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
Surr: Dibromofluoromethane	101	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
Surr: Toluene-d8	95.3	70-130		%REC	1	11/26/2013 8:16:46 PM	R15104
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	4300	0.010		µmhos/cm	1	11/27/2013 9:33:03 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.38	1.68	H	pH units	1	11/27/2013 9:33:03 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	110	20		mg/L CaCO3	1	11/27/2013 9:33:03 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:33:03 PM	R15156
Total Alkalinity (as CaCO3)	110	20		mg/L CaCO3	1	11/27/2013 9:33:03 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	3210	40.0	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 6:10:52 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:10:52 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:10:52 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 6:10:52 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 6:10:52 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 6:10:52 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 6:10:52 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 6:10:52 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 6:10:52 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 6:10:52 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 6:10:52 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 6:10:52 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 6:10:52 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 6:10:52 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 6:10:52 PM	10572
Surr: Benzo(e)pyrene	60.6	24.5-139		%REC	1	12/3/2013 6:10:52 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	1.3	0.50		mg/L	5	11/26/2013 9:17:05 PM	R15112
Chloride	230	10		mg/L	20	11/26/2013 9:29:30 PM	R15112
Bromide	1.2	0.50		mg/L	5	11/26/2013 9:17:05 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	11/26/2013 9:17:05 PM	R15112
Sulfate	930	10	*	mg/L	20	11/26/2013 9:29:30 PM	R15112
Nitrate+Nitrite as N	42	2.0	*	mg/L	10	12/7/2013 4:20:30 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	ND	0.020		mg/L	1	12/4/2013 7:31:59 PM	R15245
Barium	0.041	0.0020		mg/L	1	12/4/2013 7:31:59 PM	R15245
Boron	0.31	0.040		mg/L	1	12/4/2013 7:31:59 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:31:59 PM	R15245
Calcium	220	5.0		mg/L	5	12/4/2013 7:35:37 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:31:59 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:31:59 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:48:49 PM	R15267
Iron	0.021	0.020		mg/L	1	12/5/2013 1:48:49 PM	R15267
Magnesium	38	1.0		mg/L	1	12/4/2013 7:31:59 PM	R15245
Manganese	0.27	0.0020	*	mg/L	1	12/4/2013 7:31:59 PM	R15245

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.031	0.0080		mg/L	1	12/4/2013 7:31:59 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:48:49 PM	R15267
Potassium	16	1.0		mg/L	1	12/4/2013 7:31:59 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:31:59 PM	R15245
Sodium	330	5.0		mg/L	5	12/4/2013 7:35:37 PM	R15245
Zinc	0.023	0.010		mg/L	1	12/5/2013 1:48:49 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.0060	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
Selenium	0.028	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
Uranium	0.014	0.0010		mg/L	1	12/10/2013 2:27:18 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.0010	0.00020		mg/L	1	12/4/2013 5:59:29 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 5:24:15 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 5:24:15 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:24:15 PM	10570
Surr: 2-Fluorophenol	48.4	22.7-98		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: Phenol-d5	39.0	23.4-74.9		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: 2,4,6-Tribromophenol	64.7	23.3-111		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: Nitrobenzene-d5	60.9	36.8-111		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: 2-Fluorobiphenyl	66.4	38.3-110		%REC	1	12/2/2013 5:24:15 PM	10570
Surr: 4-Terphenyl-d14	69.4	52.1-116		%REC	1	12/2/2013 5:24:15 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 8:45:24 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 8:45:24 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/24/2013 12:15:00 PM
Lab ID: 1311B14-006
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 8:45:24 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 8:45:24 PM	R15104
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
Surr: Dibromofluoromethane	101	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
Surr: Toluene-d8	102	70-130		%REC	1	11/26/2013 8:45:24 PM	R15104
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2600	0.010		µmhos/cm	1	11/27/2013 9:42:31 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.62	1.68	H	pH units	1	11/27/2013 9:42:31 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	140	20		mg/L CaCO3	1	11/27/2013 9:42:31 PM	R15156
Carbonate (As CaCO3)	ND	2 0		mg/L CaCO3	1	11/27/2013 9:42:31 PM	R15156
Total Alkalinity (as CaCO3)	140	20		mg/L CaCO3	1	11/27/2013 9:42:31 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2010	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	12/3/2013 6:40:07 PM	10572
1-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:40:07 PM	10572
2-Methylnaphthalene	ND	2.0		µg/L	1	12/3/2013 6:40:07 PM	10572
Acenaphthylene	ND	2.5		µg/L	1	12/3/2013 6:40:07 PM	10572
Acenaphthene	ND	5.0		µg/L	1	12/3/2013 6:40:07 PM	10572
Fluorene	ND	0.80		µg/L	1	12/3/2013 6:40:07 PM	10572
Phenanthrene	ND	0.60		µg/L	1	12/3/2013 6:40:07 PM	10572
Anthracene	ND	0.60		µg/L	1	12/3/2013 6:40:07 PM	10572
Fluoranthene	ND	0.30		µg/L	1	12/3/2013 6:40:07 PM	10572
Pyrene	ND	0.30		µg/L	1	12/3/2013 6:40:07 PM	10572
Benz(a)anthracene	ND	0.070		µg/L	1	12/3/2013 6:40:07 PM	10572
Chrysene	ND	0.20		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(a)pyrene	ND	0.070		µg/L	1	12/3/2013 6:40:07 PM	10572
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/3/2013 6:40:07 PM	10572
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/3/2013 6:40:07 PM	10572
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/3/2013 6:40:07 PM	10572
Surr: Benzo(e)pyrene	60.0	24.5-139		%REC	1	12/3/2013 6:40:07 PM	10572
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	6.9	0.50	*	mg/L	5	11/26/2013 9:41:54 PM	R15112
Chloride	130	10		mg/L	20	11/26/2013 9:54:18 PM	R15112
Bromide	ND	0.50		mg/L	5	11/26/2013 9:41:54 PM	R15112
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	11/26/2013 9:41:54 PM	R15112
Sulfate	950	10	*	mg/L	20	11/26/2013 9:54:18 PM	R15112
Nitrate+Nitrite as N	9.6	1.0		mg/L	5	12/7/2013 4:32:54 AM	R15322
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	0.63	0.020	*	mg/L	1	12/4/2013 7:39:11 PM	R15245
Barium	0.047	0.0020		mg/L	1	12/4/2013 7:39:11 PM	R15245
Boron	0.39	0.040		mg/L	1	12/4/2013 7:39:11 PM	R15245
Cadmium	ND	0.0020		mg/L	1	12/4/2013 7:39:11 PM	R15245
Calcium	53	1.0		mg/L	1	12/4/2013 7:39:11 PM	R15245
Chromium	ND	0.0060		mg/L	1	12/4/2013 7:39:11 PM	R15245
Cobalt	ND	0.0060		mg/L	1	12/4/2013 7:39:11 PM	R15245
Copper	ND	0.0060		mg/L	1	12/5/2013 1:50:45 PM	R15267
Iron	0.39	0.020	*	mg/L	1	12/5/2013 1:50:45 PM	R15267
Magnesium	6.0	1.0		mg/L	1	12/4/2013 7:39:11 PM	R15245
Manganese	0.074	0.0020	*	mg/L	1	12/4/2013 7:39:11 PM	R15245

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Molybdenum	0.035	0.0080		mg/L	1	12/4/2013 7:39:11 PM	R15245
Nickel	ND	0.010		mg/L	1	12/5/2013 1:50:45 PM	R15267
Potassium	25	1.0		mg/L	1	12/4/2013 7:39:11 PM	R15245
Silver	ND	0.0050		mg/L	1	12/4/2013 7:39:11 PM	R15245
Sodium	490	5.0		mg/L	5	12/4/2013 7:47:57 PM	R15245
Zinc	0.033	0.010		mg/L	1	12/5/2013 1:50:45 PM	R15267
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.020	0.0010	*	mg/L	1	12/10/2013 2:29:58 PM	R15392
Lead	ND	0.0010		mg/L	1	12/10/2013 2:29:58 PM	R15392
Selenium	0.011	0.0010		mg/L	1	12/10/2013 2:29:58 PM	R15392
Uranium	0.0012	0.0010		mg/L	1	12/10/2013 2:29:58 PM	R15392
EPA METHOD 245.1: MERCURY						Analyst: **JML**	
Mercury	0.00077	0.00020		mg/L	1	12/4/2013 6:01:21 PM	10596
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Acenaphthylene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Aniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Anthracene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Azobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benz(a)anthracene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzoic acid	ND	40		µg/L	1	12/2/2013 5:53:08 PM	10570
Benzyl alcohol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Carbazole	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Chloroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Chlorophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570

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Qualifiers:

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- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- P Sample pH greater than 2 for VOA and TOC only.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Chrysene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Dibenzofuran	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Diethyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Dimethyl phthalate	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Fluoranthene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Fluorene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Hexachloroethane	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Isophorone	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Methylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
3+4-Methylphenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Naphthalene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
3-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Nitroaniline	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Nitrobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
4-Nitrophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Pentachlorophenol	ND	20		µg/L	1	12/2/2013 5:53:08 PM	10570
Phenanthrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Phenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Pyrene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Pyridine	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2013 5:53:08 PM	10570
Surr: 2-Fluorophenol	37.0	22.7-98		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: Phenol-d5	28.9	23.4-74.9		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: 2,4,6-Tribromophenol	55.8	23.3-111		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: Nitrobenzene-d5	46.0	36.8-111		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: 2-Fluorobiphenyl	53.6	38.3-110		%REC	1	12/2/2013 5:53:08 PM	10570
Surr: 4-Terphenyl-d14	57.1	52.1-116		%REC	1	12/2/2013 5:53:08 PM	10570
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 9:14:03 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 9:14:03 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Water Qualit
Collection Date: 11/23/2013 12:00:00 PM
Lab ID: 1311B14-007
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 9:14:03 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 9:14:03 PM	R15104
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
Surr: Dibromofluoromethane	98.8	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
Surr: Toluene-d8	97.7	70-130		%REC	1	11/26/2013 9:14:03 PM	R15104
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	11/27/2013	10569
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JML**	
Conductivity	2500	0.010		µmhos/cm	1	11/27/2013 9:52:37 PM	R15156
SM4500-H+B: PH						Analyst: **JML**	
pH	7.56	1.68	H	pH units	1	11/27/2013 9:52:37 PM	R15156
SM2320B: ALKALINITY						Analyst: **JML**	
Bicarbonate (As CaCO3)	130	20		mg/L CaCO3	1	11/27/2013 9:52:37 PM	R15156
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	11/27/2013 9:52:37 PM	R15156
Total Alkalinity (as CaCO3)	130	20		mg/L CaCO3	1	11/27/2013 9:52:37 PM	R15156
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1880	200	*	mg/L	1	11/29/2013 2:50:00 PM	10567

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1311B14-008
Matrix: AQUEOUS
Received Date: 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Toluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Ethylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Naphthalene	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Methylnaphthalene	ND	4.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Acetone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromodichloromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromoform	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Bromomethane	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Butanone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Carbon disulfide	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Carbon Tetrachloride	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chloroethane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chloroform	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Chloromethane	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
4-Chlorotoluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
cis-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Dibromochloromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Dibromomethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1-Dichloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1-Dichloroethene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,3-Dichloropropane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2,2-Dichloropropane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: Trip Blank
Project: Lightning Dock Geothermal Water Qualit
Collection Date:
Lab ID: 1311B14-008 **Matrix:** AQUEOUS **Received Date:** 11/26/2013 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Hexachlorobutadiene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
2-Hexanone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Isopropylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
4-Isopropyltoluene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
4-Methyl-2-pentanone	ND	10		µg/L	1	11/26/2013 11:08:58 PM	R15104
Methylene Chloride	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
n-Butylbenzene	ND	3.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
n-Propylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
sec-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Styrene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
tert-Butylbenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
trans-1,2-DCE	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Trichlorofluoromethane	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Vinyl chloride	ND	1.0		µg/L	1	11/26/2013 11:08:58 PM	R15104
Xylenes, Total	ND	1.5		µg/L	1	11/26/2013 11:08:58 PM	R15104
Surr: 1,2-Dichloroethane-d4	97.8	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104
Surr: Dibromofluoromethane	99.3	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104
Surr: Toluene-d8	94.5	70-130		%REC	1	11/26/2013 11:08:58 PM	R15104

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

Qualifiers:

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

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-01

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-001J MW-1

Project # :

Collected By :
Collection Date : 11/25/13 11:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	0.88	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-02

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-002J MW-2

Project # :

Collected By :
Collection Date : 11/25/13 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	1.3	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

ESC
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-03

Site ID :

Project # :

Date Received : December 04, 2013
Description :

Sample ID : 1311B14-003J MW-2B

Collected By :
Collection Date : 11/25/13 09:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	1.4	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

ESC
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Mt. Juliet, TN 37122
(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-04

Site ID :

Project # :

Date Received : December 04, 2013
Description :

Sample ID : 1311B14-004J MW-3

Collected By :
Collection Date : 11/24/13 17:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	3.7	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

ESC
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-05

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-005J MW-4

Project # :

Collected By :
Collection Date : 11/24/13 14:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	0.28	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

ESC
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YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-06

Site ID :

Project # :

Date Received : December 04, 2013
Description :

Sample ID : 1311B14-006J MW-5

Collected By :
Collection Date : 11/24/13 12:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	1.2	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

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Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 10, 2013

ESC Sample # : L671947-07

Date Received : December 04, 2013
Description :

Site ID :

Sample ID : 1311B14-007J MW-6

Project # :

Collected By :
Collection Date : 11/23/13 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus,Total	2.6	0.10	mg/l	365.4	12/09/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/10/13 11:20 Printed: 12/10/13 11:20

ESC
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Est. 1970

Hall Environmental Analysis Laboratory
Anne Thorne
4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L671947

December 10, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Phosphorus,Total	< .1	mg/l			WG696162	12/09/13 15:52

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Phosphorus,Total	mg/l	2.80	2.60	7.41	20	L671947-07	WG696162
Phosphorus,Total	mg/l	0.0	0.0	0.0	20	L671941-01	WG696162

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Phosphorus,Total	mg/l	1	0.944	94.4	90-110	WG696162

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Phosphorus,Total	mg/l	0.953	0.944	95.0	90-110	0.949	20	WG696162

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Phosphorus,Total	mg/l	2.69	0.280	2.5	96.0	90-110	L671947-05	WG696162

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Phosphorus,Total	mg/l	2.73	2.69	98.0	90-110	1.48	20	L671947-05	WG696162

Batch number /Run number / Sample number cross reference

WG696162: R2865363: L671947-01 02 03 04 05 06 07

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-001
Client Sample ID: 1311B14-001 MW-1

Report Date: 12/13/13
Collection Date: 11/25/13 11:45
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.8	mg/L		0.1		E200.7	12/02/13 21:16 / sf
Rubidium	0.2	mg/L		0.1		E200.8	12/13/13 10:33 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:33 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	238	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	45.2	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	73.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-002
Client Sample ID: 1311B14-002 MW2

Report Date: 12/13/13
Collection Date: 11/25/13 09:00
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.7	mg/L		0.1		E200.7	12/02/13 21:20 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:35 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:35 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	580	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	50.5	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	74.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-003
Client Sample ID: 1311B14-003 MW2B

Report Date: 12/13/13
Collection Date: 11/25/13 09:30
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.7	mg/L		0.1		E200.7	12/02/13 21:24 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:37 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:37 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	567	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	50.2	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	74.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-004
Client Sample ID: 1311B14-004 MW-3

Report Date: 12/13/13
Collection Date: 11/24/13 17:50
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.5	mg/L		0.1		E200.7	12/02/13 21:32 / sf
Rubidium	0.2	mg/L		0.1		E200.8	12/13/13 10:40 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:40 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	781	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	58.5	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	84.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-005
Client Sample ID: 1311B14-005 MW-4

Report Date: 12/13/13
Collection Date: 11/24/13 14:35
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	1.7	mg/L		0.1		E200.7	12/02/13 21:36 / sf
Rubidium	0.4	mg/L		0.1		E200.8	12/13/13 10:42 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:42 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	1090	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	63.4	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	86.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-006
Client Sample ID: 1311B14-006 MW-5

Report Date: 12/13/13
Collection Date: 11/24/13 12:15
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.4	mg/L		0.1		E200.7	12/02/13 21:40 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:45 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:45 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	197	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	53.3	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	88.0	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13111073-007
Client Sample ID: 1311B14-007 MW-6

Report Date: 12/13/13
Collection Date: 11/23/13 12:00
DateReceived: 11/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - DISSOLVED							
Lithium	0.8	mg/L		0.1		E200.7	12/02/13 21:44 / sf
Rubidium	0.1	mg/L		0.1		E200.8	12/13/13 10:47 / eli-b
Tungsten	ND	mg/L		0.2		E200.8	12/13/13 10:47 / eli-b
RADIONUCLIDES - TOTAL							
Radon 222	507	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 precision (±)	68.1	pCi/L				D5072-92	11/27/13 15:50 / dpb
Radon 222 MDC	106	pCi/L				D5072-92	11/27/13 15:50 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13111073

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92										Batch: R181361
Sample ID: C13111073-007BDUP	3	Sample Duplicate				Run: PACKARD 3100TR_131127A			11/27/13 15:50	
Radon 222		509	pCi/L					0.4	20	
Radon 222 precision (±)		68.2	pCi/L							
Radon 222 MDC		106	pCi/L							
Sample ID: MB-R181361	3	Method Blank				Run: PACKARD 3100TR_131127A			11/27/13 15:50	
Radon 222		6	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R181361		Laboratory Control Sample				Run: PACKARD 3100TR_131127A			11/27/13 15:50	
Radon 222		549	pCi/L		96	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 12/13/13
Work Order: C13111073

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP2-C_131202B	
Sample ID: ICV		Initial Calibration Verification Standard							12/02/13 15:58	
Lithium		0.992	mg/L	0.10	99	95	105			
Sample ID: ICSA		Interference Check Sample A							12/02/13 16:26	
Lithium		0.00190	mg/L	0.10						
Sample ID: ICSAB		Interference Check Sample AB							12/02/13 16:30	
Lithium		0.00210	mg/L	0.10						
Method: E200.7									Batch: R181387	
Sample ID: MB-131202A		Method Blank				Run: ICP2-C_131202B			12/02/13 16:54	
Lithium		ND	mg/L	0.0002						
Sample ID: LFB-131202A		Laboratory Fortified Blank				Run: ICP2-C_131202B			12/02/13 16:58	
Lithium		0.949	mg/L	0.10	95	85	115			
Sample ID: C13111038-001BMS2		Sample Matrix Spike				Run: ICP2-C_131202B			12/02/13 21:04	
Lithium		1.86	mg/L	0.10	91	70	130			
Sample ID: C13111038-001BMSD2		Sample Matrix Spike Duplicate				Run: ICP2-C_131202B			12/02/13 21:08	
Lithium		1.89	mg/L	0.10	93	70	130	1.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/13/13
Project: Not Indicated
Work Order: C13111073

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B216493	
Sample ID: QCS	2	Initial Calibration Verification Standard							12/13/13 09:32	
Rubidium		0.0533	mg/L	0.010	107	90	110			
Tungsten		0.0534	mg/L	0.10	107	90	110			
Method: E200.8									Batch: B_R216493	
Sample ID: LFB	2	Laboratory Fortified Blank				Run: SUB-B216493			12/13/13 09:34	
Rubidium		0.0476	mg/L	0.010	95	85	115			
Tungsten		0.0487	mg/L	0.10	97	85	115			
Sample ID: LRB	2	Method Blank				Run: SUB-B216493			12/13/13 09:56	
Rubidium		0.03								
Tungsten		1.0								
Sample ID: B13120270-001CMS	2	Sample Matrix Spike				Run: SUB-B216493			12/13/13 10:52	
Rubidium		0.713	mg/L	0.010		70	130			A
Tungsten		0.113	mg/L	0.10	120	70	130			
Sample ID: B13120270-001CMSD	2	Sample Matrix Spike Duplicate				Run: SUB-B216493			12/13/13 10:54	
Rubidium		0.715	mg/L	0.010		70	130	0.3	20	A
Tungsten		0.113	mg/L	0.10	120	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439555** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
ient ID: **LCSW**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439556** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.48	0.020	0.5000	0	96.9	85	115			
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Boron	0.51	0.040	0.5000	0	101	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.5	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.0	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.3	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.1	85	115			
Potassium	48	1.0	50.00	0	96.1	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Sodium	49	1.0	50.00	0	98.9	85	115			

Sample ID **1311B14-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **R15245**	RunNo: **15245**
Prep Date:	Analysis Date: **12/4/2013**	SeqNo: **439580** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311B14-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **MW-1** Batch ID: **R15245** RunNo: **15245**

Prep Date: Analysis Date: **12/4/2013** SeqNo: **439580** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0.03447	102	70	130			
Barium	0.53	0.0020	0.5000	0.06312	93.7	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.9	70	130			
Calcium	94	1.0	50.00	50.58	87.6	70	130			
Chromium	0.46	0.0060	0.5000	0	92.4	70	130			
Cobalt	0.46	0.0060	0.5000	0.001830	91.5	70	130			
Magnesium	51	1.0	50.00	2.055	98.8	70	130			
Manganese	0.67	0.0020	0.5000	0.2066	92.0	70	130			
Molybdenum	0.55	0.0080	0.5000	0.05781	98.2	70	130			
Nickel	0.44	0.010	0.5000	0	87.5	70	130			
Potassium	70	1.0	50.00	21.70	96.8	70	130			
Silver	0.096	0.0050	0.1000	0	96.2	70	130			

Sample ID **1311B14-001GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **MW-1** Batch ID: **R15245** RunNo: **15245**

Prep Date: Analysis Date: **12/4/2013** SeqNo: **439582** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0.03447	101	70	130	0.437	20	
Barium	0.53	0.0020	0.5000	0.06312	92.4	70	130	1.15	20	
Cadmium	0.49	0.0020	0.5000	0	97.9	70	130	0.00817	20	
Calcium	96	1.0	50.00	50.58	90.2	70	130	1.37	20	
Chromium	0.46	0.0060	0.5000	0	91.8	70	130	0.651	20	
Cobalt	0.46	0.0060	0.5000	0.001830	91.0	70	130	0.493	20	
Magnesium	53	1.0	50.00	2.055	103	70	130	3.58	20	
Manganese	0.66	0.0020	0.5000	0.2066	90.5	70	130	1.12	20	
Molybdenum	0.55	0.0080	0.5000	0.05781	98.4	70	130	0.186	20	
Nickel	0.43	0.010	0.5000	0	86.8	70	130	0.718	20	
Potassium	72	1.0	50.00	21.70	101	70	130	3.16	20	
Silver	0.095	0.0050	0.1000	0	95.0	70	130	1.28	20	

Sample ID **1311B14-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **MW-1** Batch ID: **R15245** RunNo: **15245**

Prep Date: Analysis Date: **12/4/2013** SeqNo: **439584** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.1	0.20	2.500	0.7014	97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Tall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	**1311B14-001GMSD**	SampType: **MSD**		TestCode: **EPA Method 200.7: Dissolved Metals**						
Client ID:	**MW-1**	Batch ID: **R15245**		RunNo: **15245**						
Prep Date:		Analysis Date: **12/4/2013**		SeqNo: **439585**		Units: **mg/L**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		3.2	0.20	2.500	0.7014	101	70	130	2.30	20	

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA Method 200.7: Dissolved Metals**						
Client ID:	**PBW**	Batch ID: **R15267**		RunNo: **15267**						
Prep Date:		Analysis Date: **12/5/2013**		SeqNo: **440169**		Units: **mg/L**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		ND	0.0060								
Iron		ND	0.020								
Nickel		ND	0.010								
Sodium		ND	1.0								
Zinc		ND	0.010								

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA Method 200.7: Dissolved Metals**						
Client ID:	**LCSW**	Batch ID: **R15267**		RunNo: **15267**						
Prep Date:		Analysis Date: **12/5/2013**		SeqNo: **440170**		Units: **mg/L**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		0.48	0.0060	0.5000	0	95.4	85	115			
Iron		0.51	0.020	0.5000	0	102	85	115			
Nickel		0.46	0.010	0.5000	0	93.0	85	115			
Sodium		51	1.0	50.00	0	102	85	115			
Zinc		0.49	0.010	0.5000	0	97.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.025	0.0010	0.02500	0	99.1	85	115			
Selenium	0.024	0.0010	0.02500	0	97.7	85	115			
Uranium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.024	0.0010	0.02500	0	96.8	85	115			
Selenium	0.025	0.0010	0.02500	0	99.3	85	115			
Uranium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443417** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15392**	RunNo: **15392**
Prep Date:	Analysis Date: **12/10/2013**	SeqNo: **443418** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10596**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **10596**	RunNo: **15236**
Prep Date: **12/2/2013**	Analysis Date: **12/4/2013**	SeqNo: **439897** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-10596**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **10596**	RunNo: **15236**
Prep Date: **12/2/2013**	Analysis Date: **12/4/2013**	SeqNo: **439898** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**

Prep Date: Analysis Date: **11/26/2013** SeqNo: **436040** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	1.600	0	95.8	90	110			
Chloride	7.7	0.50	8.000	0	96.6	90	110			
Bromide	8.0	0.10	8.000	0	99.5	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	102	90	110			
Phosphorus, Orthophosphate (As P	7.5	0.50	8.000	0	94.3	90	110			
Sulfate	20	0.50	20.00	0	98.4	90	110			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBW** Batch ID: **R15112** RunNo: **15112**

Prep Date: Analysis Date: **11/26/2013** SeqNo: **436042** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
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: **R15112** RunNo: **15112**

Prep Date: Analysis Date: **11/26/2013** SeqNo: **436043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.9	90	110			
Chloride	4.9	0.50	5.000	0	97.5	90	110			
Bromide	2.6	0.10	2.500	0	102	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	10	0.50	10.00	0	99.9	90	110			

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**

Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**

Prep Date: Analysis Date: **11/26/2013** SeqNo: **436054** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.3	0.10	2.400	0	97.7	90	110			
Chloride	12	0.50	12.00	0	101	90	110			
Bromide	12	0.10	12.00	0	101	90	110			
Nitrogen, Nitrate (As N)	7.7	0.10	7.200	0	107	90	110			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**
Prep Date: Analysis Date: **11/26/2013** SeqNo: **436054** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	98.5	90	110			
Sulfate	30	0.50	30.00	0	102	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**
Prep Date: Analysis Date: **11/26/2013** SeqNo: **436066** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.97	0.10	1.000	0	97.2	90	110			
Chloride	4.6	0.50	5.000	0	92.8	90	110			
Bromide	4.8	0.10	5.000	0	96.7	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.3	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.9	90	110			
Sulfate	12	0.50	12.50	0	94.4	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
ient ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**
rep Date: Analysis Date: **11/26/2013** SeqNo: **436078** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	1.600	0	96.3	90	110			
Chloride	7.8	0.50	8.000	0	96.9	90	110			
Bromide	8.0	0.10	8.000	0	99.6	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	103	90	110			
Phosphorus, Orthophosphate (As P	7.7	0.50	8.000	0	96.3	90	110			
Sulfate	20	0.50	20.00	0	98.6	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**
Prep Date: Analysis Date: **11/26/2013** SeqNo: **436090** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.95	0.10	1.000	0	94.6	90	110			
Chloride	4.6	0.50	5.000	0	92.7	90	110			
Bromide	4.8	0.10	5.000	0	96.9	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.5	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **436102** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.3	0.10	2.400	0	97.2	90	110			
Chloride	12	0.50	12.00	0	100	90	110			
Bromide	12	0.10	12.00	0	100	90	110			
Nitrogen, Nitrate (As N)	7.7	0.10	7.200	0	107	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	98.8	90	110			
Sulfate	30	0.50	30.00	0	101	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15112** RunNo: **15112**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **436114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.96	0.10	1.000	0	96.1	90	110			
Chloride	4.6	0.50	5.000	0	93.0	90	110			
Bromide	4.9	0.10	5.000	0	97.6	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.6	90	110			
Sulfate	12	0.50	12.50	0	95.0	90	110			

Sample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	98.0	90	110			
Sulfate	20	0.50	20.00	0	101	90	110			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437561** 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: **R15178** RunNo: **15178**
Prep Date: Analysis Date: **11/27/2013** SeqNo: **437562** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437562** 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	94.4	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Sulfate	31	0.50	30.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437583** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
oride	4.7	0.50	5.000	0	94.5	90	110			
fate	12	0.50	12.50	0	96.7	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	97.7	90	110			
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437611** 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	94.4	90	110			
Sulfate	12	0.50	12.50	0	96.5	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437623** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**							
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437623**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Sulfate	31	0.50	30.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**							
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437635**	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	94.6	90	110			
Sulfate	12	0.50	12.50	0	97.0	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**							
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437647**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	98.0	90	110			
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15178**	RunNo: **15178**							
Prep Date:	Analysis Date: **11/28/2013**	SeqNo: **437653**	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	94.8	90	110			
Sulfate	12	0.50	12.50	0	97.2	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441502**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	8.2	0.10	8.000	0	102	90	110			
Nitrate+Nitrite as N	8.1	0.20	8.000	0	102	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441514**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441514**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	13	0.10	12.00	0	104	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441526**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	5.0	0.10	5.000	0	99.7	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.5	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441530**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
;mide	ND	0.10								
'ate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441531**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.3	0.10	2.500	0	93.8	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/6/2013**	SeqNo: **441538**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	8.1	0.10	8.000	0	102	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15322**	RunNo: **15322**							
Prep Date:	Analysis Date: **12/7/2013**	SeqNo: **441550**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **A6**	SampType: **CCV_6**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **BatchQC**	Batch ID: **R15322**			RunNo: **15322**					
Prep Date:	Analysis Date: **12/7/2013**			SeqNo: **441550**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	12	0.10	12.00	0	104	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	104	90	110			

Sample ID **A4**	SampType: **CCV_4**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **BatchQC**	Batch ID: **R15322**			RunNo: **15322**					
Prep Date:	Analysis Date: **12/7/2013**			SeqNo: **441562**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	5.0	0.10	5.000	0	99.7	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	96.6	90	110			

Sample ID **A5**	SampType: **CCV_5**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **BatchQC**	Batch ID: **R15322**			RunNo: **15322**					
Prep Date:	Analysis Date: **12/7/2013**			SeqNo: **441568**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	8.2	0.10	8.000	0	102	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Sample ID **A4**	SampType: **CCV_4**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **BatchQC**	Batch ID: **R15376**			RunNo: **15376**					
Prep Date:	Analysis Date: **12/9/2013**			SeqNo: **443035**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.7	90	110			

Sample ID **A5**	SampType: **CCV_5**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **BatchQC**	Batch ID: **R15376**			RunNo: **15376**					
Prep Date:	Analysis Date: **12/9/2013**			SeqNo: **443047**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	7.7	0.50	8.000	0	96.5	90	110			

Sample ID **A6**	SampType: **CCV_6**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **BatchQC**	Batch ID: **R15376**			RunNo: **15376**					
Prep Date:	Analysis Date: **12/9/2013**			SeqNo: **443059**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	99.7	90	110			

Qualifiers:

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- E Value above quantitation range
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- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R15376**	RunNo: **15376**							
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443069**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R15376**	RunNo: **15376**							
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443070**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.5	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R15376**	RunNo: **15376**							
Prep Date:	Analysis Date: **12/9/2013**	SeqNo: **443071**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.5	90	110			

Qualifiers:

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- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
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- P Sample pH greater than 2 for VOA and TOC only.
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID	**MB-10569**	SampType:	**MBLK**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**PBW**	Batch ID:	**10569**		RunNo:	**15129**				
Prep Date:	**11/27/2013**	Analysis Date:	**11/27/2013**		SeqNo:	**436536**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID	**LCS-10569**	SampType:	**LCS**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**LCSW**	Batch ID:	**10569**		RunNo:	**15129**				
Prep Date:	**11/27/2013**	Analysis Date:	**11/27/2013**		SeqNo:	**436537**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	91.4	80	120			

Sample ID	**LCSD-10569**	SampType:	**LCSD**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**LCSS02**	Batch ID:	**10569**		RunNo:	**15129**				
Prep Date:	**11/27/2013**	Analysis Date:	**11/27/2013**		SeqNo:	**436538**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.6	1.0	5.000	0	91.4	80	120	0	20	

Qualifiers:

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QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435717** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
·omomethane	ND	3.0								
utanone	ND	10								
,rbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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- B Analyte detected in the associated Method Blank
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435717** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.6	70	130			
Toluene	18	1.0	20.00	0	90.9	82.2	124			
Chlorobenzene	17	1.0	20.00	0	87.5	70	130			

Qualifiers:

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- E Value above quantitation range
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QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	106	83.5	155			
Trichloroethene (TCE)	17	1.0	20.00	0	85.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.1	70	130			
Surr: Toluene-d8	9.8		10.00		98.2	70	130			

Sample ID **1311b14-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-1**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435726** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.9	67.9	137			
Toluene	19	1.0	20.00	0	95.4	77	127			
Chlorobenzene	17	1.0	20.00	0	87.2	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	99.0	66.5	131			
Trichloroethene (TCE)	17	1.0	20.00	0	87.2	66.3	134			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.9		10.00		99.4	70	130			

Sample ID **1311b14-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-1**	Batch ID: **R15104**	RunNo: **15104**
Prep Date:	Analysis Date: **11/26/2013**	SeqNo: **435727** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.6	67.9	137	5.59	20	
Toluene	18	1.0	20.00	0	88.5	77	127	7.44	20	
Chlorobenzene	17	1.0	20.00	0	82.6	70	130	5.41	20	
1,1-Dichloroethene	19	1.0	20.00	0	94.9	66.5	131	4.19	20	
Trichloroethene (TCE)	17	1.0	20.00	0	83.1	66.3	134	4.90	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		99.7	70	130	0	0	
Surr: Toluene-d8	9.7		10.00		97.0	70	130	0	0	

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10570**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437548** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-10570**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437548** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
`` Nitrosodimethylamine	ND	10								
.itrosodiphenylamine	ND	10								
.phthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		53.3	22.7	98			
Surr: Phenol-d5	87		200.0		43.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	140		200.0		71.3	23.3	111			
Surr: Nitrobenzene-d5	66		100.0		65.8	36.8	111			
Surr: 2-Fluorobiphenyl	61		100.0		61.2	38.3	110			
Surr: 4-Terphenyl-d14	76		100.0		75.9	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **lcs-10570**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437549** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	72	10	100.0	0	72.0	48	101			
4-Chloro-3-methylphenol	150	10	200.0	0	76.0	47.9	109			
2-Chlorophenol	140	10	200.0	0	67.7	40	105			
1,4-Dichlorobenzene	63	10	100.0	0	62.8	40.8	94.3			
2,4-Dinitrotoluene	69	10	100.0	0	69.2	28.3	131			
N-Nitrosodi-n-propylamine	76	10	100.0	0	76.1	46.2	119			
4-Nitrophenol	70	10	200.0	0	35.0	10.5	67.9			
Pentachlorophenol	100	20	200.0	0	52.5	22.4	81.1			
Phenol	83	10	200.0	0	41.5	21.4	72.9			
Pyrene	74	10	100.0	0	74.4	46.9	109			
1,2,4-Trichlorobenzene	65	10	100.0	0	64.8	43.1	98.4			
Surr: 2-Fluorophenol	100		200.0		51.1	22.7	98			
Surr: Phenol-d5	80		200.0		40.1	23.4	74.9			
Surr: 2,4,6-Tribromophenol	150		200.0		75.6	23.3	111			
Surr: Nitrobenzene-d5	68		100.0		67.8	36.8	111			
Surr: 2-Fluorobiphenyl	69		100.0		68.9	38.3	110			
Surr: 4-Terphenyl-d14	83		100.0		82.7	52.1	116			

Sample ID **1311b14-005dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **MW-4**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	80	10	100.0	0	79.7	52.5	94.5			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	45	103			
2-Chlorophenol	140	10	200.0	0	67.7	32.3	101			
1,4-Dichlorobenzene	65	10	100.0	0	65.3	34.5	97.5			
2,4-Dinitrotoluene	75	10	100.0	0	75.3	20.1	123			
N-Nitrosodi-n-propylamine	70	10	100.0	0	70.1	26.9	131			
4-Nitrophenol	90	10	200.0	0	44.9	11.6	55.4			
Pentachlorophenol	130	20	200.0	0	65.9	17.6	88.9			
Phenol	79	10	200.0	0	39.4	18.4	66.5			
Pyrene	76	10	100.0	0	76.2	43.1	111			
1,2,4-Trichlorobenzene	71	10	100.0	0	70.8	38.8	95.6			
Surr: 2-Fluorophenol	110		200.0		53.8	22.7	98			
Surr: Phenol-d5	83		200.0		41.6	23.4	74.9			
Surr: 2,4,6-Tribromophenol	170		200.0		86.7	23.3	111			
Surr: Nitrobenzene-d5	76		100.0		75.9	36.8	111			
Surr: 2-Fluorobiphenyl	83		100.0		83.0	38.3	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311b14-005dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **MW-4**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	78		100.0		78.4	52.1	116			

Sample ID **1311b14-005dmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **MW-4**	Batch ID: **10570**	RunNo: **15177**
Prep Date: **11/27/2013**	Analysis Date: **12/2/2013**	SeqNo: **437558** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	62.7	52.5	94.5	23.9	20	R
4-Chloro-3-methylphenol	130	10	200.0	0	66.1	45	103	6.14	20	
2-Chlorophenol	120	10	200.0	0	61.7	32.3	101	9.40	20	
1,4-Dichlorobenzene	57	10	100.0	0	56.6	34.5	97.5	14.3	20	
2,4-Dinitrotoluene	65	10	100.0	0	64.7	20.1	123	15.1	20	
N-Nitrosodi-n-propylamine	70	10	100.0	0	70.0	26.9	131	0.200	20	
4-Nitrophenol	72	10	200.0	0	35.9	11.6	55.4	22.3	20	R
Pentachlorophenol	130	20	200.0	0	64.0	17.6	88.9	2.80	20	
Phenol	75	10	200.0	0	37.4	18.4	66.5	5.34	20	
ene	69	10	100.0	0	69.3	43.1	111	9.54	20	
,4-Trichlorobenzene	56	10	100.0	0	56.2	38.8	95.6	23.1	20	R
Surr: 2-Fluorophenol	89		200.0		44.3	22.7	98	0	0	
Surr: Phenol-d5	72		200.0		35.9	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.6	23.3	111	0	0	
Surr: Nitrobenzene-d5	65		100.0		65.1	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.4	38.3	110	0	0	
Surr: 4-Terphenyl-d14	67		100.0		67.5	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10572**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10572**	RunNo: **15191**
Prep Date: **11/27/2013**	Analysis Date: **12/3/2013**	SeqNo: **438044** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	29		20.00		144	24.5	139			S

Sample ID **LCS-10572**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10572**	RunNo: **15191**
Prep Date: **11/27/2013**	Analysis Date: **12/3/2013**	SeqNo: **438046** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	49	2.0	80.00	0	60.8	43.8	96.9			
1-Methylnaphthalene	44	2.0	80.20	0	55.1	41.3	87.3			
2-Methylnaphthalene	42	2.0	80.00	0	52.0	36.6	89.6			
Acenaphthylene	52	2.5	80.20	0	64.8	43.6	103			
Acenaphthene	44	5.0	80.00	0	54.6	42.4	87.6			
Fluorene	4.5	0.80	8.020	0	56.2	40.5	93.6			
Phenanthrene	2.6	0.60	4.020	0	63.7	43.9	111			
Anthracene	2.5	0.60	4.020	0	62.9	44.3	103			
Fluoranthene	4.7	0.30	8.020	0	58.4	43.5	109			
Pyrene	5.0	0.30	8.020	0	62.6	32.6	103			
Benz(a)anthracene	0.50	0.070	0.8020	0	62.3	43	114			
Chrysene	2.4	0.20	4.020	0	59.5	40.2	100			
Benzo(b)fluoranthene	0.64	0.10	1.002	0	63.9	44.4	118			
Benzo(k)fluoranthene	0.32	0.070	0.5000	0	64.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **LCS-10572** SampType: **LCS** TestCode: **EPA Method 8310: PAHs**

Client ID: **LCSW** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438046** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.33	0.070	0.5020	0	65.7	34.5	118			
Dibenz(a,h)anthracene	0.66	0.12	1.002	0	65.9	38.3	107			
Benzo(g,h,i)perylene	0.64	0.12	1.000	0	64.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.5	0.25	2.004	0	73.4	42.4	113			
Surr: Benzo(e)pyrene	26		20.00		132	24.5	139			

Sample ID **1311B14-005CMS** SampType: **MS** TestCode: **EPA Method 8310: PAHs**

Client ID: **MW-4** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438531** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	40	2.0	80.00	0	50.3	70	130			S
1-Methylnaphthalene	33	2.0	80.20	0	41.0	70	130			S
2-Methylnaphthalene	29	2.0	80.00	0	36.1	70	130			S
Acenaphthylene	46	2.5	80.20	0	57.6	70	130			S
Acenaphthene	34	5.0	80.00	0	42.1	70	130			S
orene	3.4	0.80	8.020	0	42.3	70	130			S
enanthrene	2.2	0.60	4.020	0	54.2	70	130			S
Anthracene	2.1	0.60	4.020	0	52.5	70	130			S
Fluoranthene	5.8	0.30	8.020	0	71.8	70	130			
Pyrene	4.2	0.30	8.020	0	53.0	70	130			S
Benz(a)anthracene	0.43	0.070	0.8020	0	53.6	70	130			S
Chrysene	2.1	0.20	4.020	0.1100	50.5	70	130			S
Benzo(b)fluoranthene	0.61	0.10	1.002	0	60.9	70	130			S
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	70	130			S
Benzo(a)pyrene	0.26	0.070	0.5020	0	51.8	70	130			S
Dibenz(a,h)anthracene	0.57	0.12	1.002	0	56.9	70	130			S
Benzo(g,h,i)perylene	0.51	0.12	1.000	0	51.0	70	130			S
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	70	130			S
Surr: Benzo(e)pyrene	12		20.00		58.2	24.5	139			

Sample ID **1311B14-005CMSD** SampType: **MSD** TestCode: **EPA Method 8310: PAHs**

Client ID: **MW-4** Batch ID: **10572** RunNo: **15191**

Prep Date: **11/27/2013** Analysis Date: **12/3/2013** SeqNo: **438532** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	40	2.0	80.00	0	50.2	70	130	0.199	20	S
1-Methylnaphthalene	34	2.0	80.20	0	41.9	70	130	2.32	20	S
2-Methylnaphthalene	31	2.0	80.00	0	38.4	70	130	6.14	20	S
Acenaphthylene	47	2.5	80.20	0	59.2	70	130	2.78	20	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **1311B14-005CMSD**	SampType: **MSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **MW-4**	Batch ID: **10572**	RunNo: **15191**
Prep Date: **11/27/2013**	Analysis Date: **12/3/2013**	SeqNo: **438532** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	35	5.0	80.00	0	43.3	70	130	2.81	20	S
Fluorene	3.4	0.80	8.020	0	42.0	70	130	0.592	20	S
Phenanthrene	2.1	0.60	4.020	0	51.5	70	130	5.18	20	S
Anthracene	2.1	0.60	4.020	0	52.7	70	130	0.473	20	S
Fluoranthene	5.3	0.30	8.020	0	66.5	70	130	7.75	20	S
Pyrene	4.2	0.30	8.020	0	52.6	70	130	0.708	20	S
Benz(a)anthracene	0.43	0.070	0.8020	0	53.6	70	130	0	20	S
Chrysene	2.2	0.20	4.020	0.1100	50.7	70	130	0.466	20	S
Benzo(b)fluoranthene	0.60	0.10	1.002	0	59.9	70	130	1.65	20	S
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	70	130	0	20	S
Benzo(a)pyrene	0.26	0.070	0.5020	0	51.8	70	130	0	20	S
Dibenz(a,h)anthracene	0.57	0.12	1.002	0	56.9	70	130	0	20	S
Benzo(g,h,i)perylene	0.51	0.12	1.000	0	51.0	70	130	0	20	S
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	65.9	70	130	0	20	S
Surr: Benzo(e)pyrene	12		20.00		58.2	24.5	139	0		

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **mb-1**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15156**	RunNo: **15156**							
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **436999**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15156**	RunNo: **15156**							
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437000**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	100	90	110			

Sample ID **mb-2**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15156**	RunNo: **15156**							
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437020**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-2**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15156**	RunNo: **15156**							
Prep Date:	Analysis Date: **11/27/2013**	SeqNo: **437021**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311B14**

16-Dec-13

Client: AMEC

Project: Lightning Dock Geothermal Water Quality Moni

Sample ID **MB-10567**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10567**	RunNo: **15143**
Prep Date: **11/27/2013**	Analysis Date: **11/29/2013**	SeqNo: **436797** 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-10567**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10567**	RunNo: **15143**
Prep Date: **11/27/2013**	Analysis Date: **11/29/2013**	SeqNo: **436798** Units: **mg/L**

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC Work Order Number: 1311B14 RcptNo: 1

Received by/date: MG 11/26/13

Logged By: Anne Thorne 11/26/2013 9:15:00 AM Anne Thorne

Completed By: Anne Thorne 11/26/2013 Anne Thorne

Reviewed By: IO 11/26/13

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☐	No ☑	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☐	No ☑	
9. Was preservative added to bottles?	Yes ☑	No ☐	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	HNO3 No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☑	No ☐	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 24 (<2 or >12 unless noted)

Adjusted? See below

Checked by: [signature]

Special Handling (if applicable)

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

Person Notified:	DAVID JANNEY	Date	11/26/2013
By Whom:		Via:	☐ eMail ☑ Phone ☐ Fax ☐ In Person
Regarding:	SEE BELOW		
Client Instructions:			

17. Additional remarks: added 1mL HNO3 to Hg bottles for acceptable pH / A 11/26/13 @1245

MW-4, MW-5 TPH BOTTLES ARRIVED BROKEN, NOT ENOUGH VOLUME FOR RADIUM 226/228-/at 11/26/13

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
4	3.8	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: AMEC Environment & Infrastructure, Inc.

Mailing Address: 8519 Jefferson St NE ABQ, NM 87113

Phone #: (505) 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation ☐ NELAP ☐ Other ________

☒ EDD (Type) Excel AT 12/06/13

Turn-Around Time: ☒ Standard ☐ Rush ________

Project Name: Lightning Dock Geothermal Water Quality Monitoring

Project #: 11-517-00102

Project Manager: David Janney

Sampler: Eric Koenig

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.8

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1311B14	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Metals Plus Br, Li, Rb, W	U (6010B/6020)	Radium 226/228	No Radon AT 11/26/13	Air Bubbles (Y or N)
11/25/13	11:45	Water	MW-1	13	HCl, HNO_3, H_2SO_4	-001				X		X		X		X	X	X	X	X	X	
11/25/13	9:00	↓	MW-2	↓	↓	-002				X		X		X		X	X	X	X	X	X	
11/25/13	9:20	↓	MW-2B	↓	↓	-003				X		X		X		X	X	X	X	X	X	
11/24/13	17:50	↓	MW-3	↓	↓	-004				X		X		X		X	X	X	X	X	X	
11/24/13	14:35	↓	MW-4	AT no 8310/8270	↓	-005				X		X		X		X	X	X	X	X	X	
11/24/13	12:15	↓	MW-5	↓	↓	-006				X		X		X		X	X	X	X	X	X	
11/23/13	12:00	↓	MW-6	↓	↓	-007				X		X		X		X	X	X	X	X	X	
			Trip Blank AT 11/26/13			-008				X		~~X~~		~~X~~		X	~~X~~	~~X~~	~~X~~			

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/25/13	15:00	Eric D. Koenig	[signature]	11/26/13	0915

Remarks: Invoice Cyrq Energy. See attached for full analyte list. MW-4 + MW-5 418 bottles were broken upon Receipt AT 11/26/13

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

January 22, 2014

David Janney
Cyrq Energy Inc
PO Box 86
Animas, NM 88020
TEL: (505) 796-7276
FAX

RE: Lightning Dock CYRQ ENERGY OrderNo.: 1312659

Dear David Janney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/16/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312659**
Date Reported: **1/22/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/16/2013 9:45:56 PM	10822
EPA METHOD 8082: PCB'S							Analyst: **SCC**
Aroclor 1016	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1221	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1232	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1242	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1248	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1254	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Aroclor 1260	ND	1.0		µg/L	1	12/18/2013 4:15:08 AM	10796
Surr: Decachlorobiphenyl	78.8	17-123		%REC	1	12/18/2013 4:15:08 AM	10796
Surr: Tetrachloro-m-xylene	55.2	22.6-113		%REC	1	12/18/2013 4:15:08 AM	10796
EPA METHOD 8310: PAHS							Analyst: **SCC**
Naphthalene	ND	2.0		µg/L	1	12/17/2013 10:00:05 PM	10797
1-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:00:05 PM	10797
2-Methylnaphthalene	ND	2.0		µg/L	1	12/17/2013 10:00:05 PM	10797
Acenaphthylene	ND	2.5		µg/L	1	12/17/2013 10:00:05 PM	10797
Acenaphthene	ND	5.0		µg/L	1	12/17/2013 10:00:05 PM	10797
Fluorene	ND	0.80		µg/L	1	12/17/2013 10:00:05 PM	10797
Phenanthrene	ND	0.60		µg/L	1	12/17/2013 10:00:05 PM	10797
Anthracene	ND	0.60		µg/L	1	12/17/2013 10:00:05 PM	10797
Fluoranthene	ND	0.30		µg/L	1	12/17/2013 10:00:05 PM	10797
Pyrene	ND	0.30		µg/L	1	12/17/2013 10:00:05 PM	10797
Benz(a)anthracene	ND	0.070		µg/L	1	12/17/2013 10:00:05 PM	10797
Chrysene	ND	0.20		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(b)fluoranthene	ND	0.10		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(k)fluoranthene	ND	0.070		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(a)pyrene	ND	0.070		µg/L	1	12/17/2013 10:00:05 PM	10797
Dibenz(a,h)anthracene	ND	0.12		µg/L	1	12/17/2013 10:00:05 PM	10797
Benzo(g,h,i)perylene	ND	0.12		µg/L	1	12/17/2013 10:00:05 PM	10797
Indeno(1,2,3-cd)pyrene	ND	0.25		µg/L	1	12/17/2013 10:00:05 PM	10797
Surr: Benzo(e)pyrene	46.0	24.5-139		%REC	1	12/17/2013 10:00:05 PM	10797
EPA METHOD 300.0: ANIONS							Analyst: **JRR**
Fluoride	9.3	2.0	*	mg/L	20	12/16/2013 9:57:25 PM	R15551
Chloride	120	10		mg/L	20	12/16/2013 9:57:25 PM	R15551
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/16/2013 9:45:00 PM	R15551
Sulfate	540	10	*	mg/L	20	12/16/2013 9:57:25 PM	R15551
Nitrate+Nitrite as N	15	1.0	*	mg/L	5	12/17/2013 4:47:07 AM	R15551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JLF**	
Aluminum	25	1.0	*	mg/L	50	12/23/2013 5:48:42 PM	R15707
Barium	0.14	0.0020		mg/L	1	12/19/2013 5:37:06 PM	R15612
Boron	0.45	0.040		mg/L	1	12/19/2013 5:37:06 PM	R15612
Cadmium	ND	0.0020		mg/L	1	12/19/2013 5:37:06 PM	R15612
Calcium	53	1.0		mg/L	1	12/19/2013 5:37:06 PM	R15612
Chromium	ND	0.0060		mg/L	1	12/19/2013 5:37:06 PM	R15612
Cobalt	ND	0.0060		mg/L	1	12/19/2013 5:37:06 PM	R15612
Copper	ND	0.0060		mg/L	1	12/19/2013 5:37:06 PM	R15612
Iron	8.5	1.0	*	mg/L	50	12/23/2013 5:48:42 PM	R15707
Magnesium	4.6	1.0		mg/L	1	12/19/2013 5:37:06 PM	R15612
Manganese	0.27	0.0020	*	mg/L	1	12/19/2013 5:37:06 PM	R15612
Molybdenum	0.029	0.0080		mg/L	1	12/19/2013 5:37:06 PM	R15612
Nickel	ND	0.010		mg/L	1	12/19/2013 5:37:06 PM	R15612
Potassium	21	1.0		mg/L	1	12/19/2013 5:37:06 PM	R15612
Silver	ND	0.0050		mg/L	1	12/19/2013 5:37:06 PM	R15612
Sodium	320	5.0		mg/L	5	12/19/2013 5:38:52 PM	R15612
Zinc	0.015	0.010		mg/L	1	12/19/2013 5:37:06 PM	R15612
EPA 200.8: DISSOLVED METALS						Analyst: **DBD**	
Arsenic	0.011	0.0010	*	mg/L	1	1/6/2014 5:07:15 PM	R15909
Lead	0.0044	0.0010		mg/L	1	1/6/2014 5:07:15 PM	R15909
Uranium	0.0037	0.0010		mg/L	1	1/7/2014 6:04:39 PM	R15934
EPA METHOD 245.1: MERCURY						Analyst: **IDC**	
Mercury	0.0016	0.00020		mg/L	1	1/3/2014 3:50:20 PM	11064
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Acenaphthylene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Aniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Anthracene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Azobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benz(a)anthracene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(a)pyrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzoic acid	ND	40		µg/L	1	12/18/2013 9:34:48 AM	10800
Benzyl alcohol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Carbazole	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Chloroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Chloronaphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Chlorophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Chrysene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Dibenzofuran	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Diethyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Dimethyl phthalate	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dichlorophenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Fluoranthene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Fluorene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachlorobutadiene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Hexachloroethane	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Isophorone	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Methylnaphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Methylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
3+4-Methylphenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
N-Nitrosodimethylamine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Naphthalene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Nitroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
3-Nitroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Nitroaniline	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Nitrobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2-Nitrophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
4-Nitrophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Pentachlorophenol	ND	20		µg/L	1	12/18/2013 9:34:48 AM	10800
Phenanthrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Phenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Pyrene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Pyridine	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/2013 9:34:48 AM	10800
Surr: 2-Fluorophenol	47.0	22.7-98		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: Phenol-d5	35.9	23.4-74.9		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: 2,4,6-Tribromophenol	74.6	23.3-111		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: Nitrobenzene-d5	69.6	36.8-111		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: 2-Fluorobiphenyl	70.7	38.3-110		%REC	1	12/18/2013 9:34:48 AM	10800
Surr: 4-Terphenyl-d14	73.1	52.1-116		%REC	1	12/18/2013 9:34:48 AM	10800
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Toluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Ethylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,4-Trimethylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Naphthalene	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1-Methylnaphthalene	ND	8.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Methylnaphthalene	ND	8.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Acetone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Bromobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Bromodichloromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Bromoform	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Bromomethane	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Butanone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Carbon disulfide	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Carbon Tetrachloride	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chloroethane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chloroform	33	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Chloromethane	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Chlorotoluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
4-Chlorotoluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
cis-1,2-DCE	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Dibromochloromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Dibromomethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,3-Dichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,4-Dichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Dichlorodifluoromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1-Dichloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1-Dichloroethene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2-Dichloropropane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,3-Dichloropropane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2,2-Dichloropropane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1-Dichloropropene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Hexachlorobutadiene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
2-Hexanone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Isopropylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
4-Isopropyltoluene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
4-Methyl-2-pentanone	ND	20		µg/L	2	12/17/2013 12:59:26 AM	R15529
Methylene Chloride	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
n-Butylbenzene	ND	6.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
n-Propylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
sec-Butylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Styrene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
tert-Butylbenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cyrq Energy Inc
Client Sample ID: MW-1B
Project: Lightning Dock CYRQ ENERGY
Collection Date: 12/11/2013 10:45:00 AM
Lab ID: 1312659-001 **Matrix:** AQUEOUS **Received Date:** 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
trans-1,2-DCE	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,1-Trichloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,1,2-Trichloroethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Trichloroethene (TCE)	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Trichlorofluoromethane	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
1,2,3-Trichloropropane	ND	4.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Vinyl chloride	ND	2.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Xylenes, Total	ND	3.0		µg/L	2	12/17/2013 12:59:26 AM	R15529
Surr: 1,2-Dichloroethane-d4	86.9	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
Surr: 4-Bromofluorobenzene	91.5	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
Surr: Dibromofluoromethane	93.1	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
Surr: Toluene-d8	92.6	70-130		%REC	2	12/17/2013 12:59:26 AM	R15529
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	1.3	1.0		mg/L	1	12/17/2013	10820
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10891
SM4500-H+B: PH						Analyst: **SRM**	
pH	7.66	1.68	H	pH units	1	12/16/2013 5:58:17 PM	R15528
SM2320B: ALKALINITY						Analyst: **SRM**	
Bicarbonate (As CaCO3)	86	20		mg/L CaCO3	1	12/16/2013 5:58:17 PM	R15528
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	12/16/2013 5:58:17 PM	R15528
Total Alkalinity (as CaCO3)	86	20		mg/L CaCO3	1	12/16/2013 5:58:17 PM	R15528
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1520	200	*	mg/L	1	12/19/2013 11:19:00 AM	10843

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218049
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1312659
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218049-001	**Sampling Date**	12/11/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312659-001K / MW-1B	**Sampling Time**	10:45 AM		
Matrix	Water				
Comments	Metals samples received unfiltered and preserved with HNO3.				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Lithium	0.533	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Rubidium	0.189	mg/L	0.001	1/21/2014	ETL	EPA 200.8	
Dissolved Tungsten	0.0386	mg/L	0.01	1/21/2014	ETL	EPA 200.8	

Sample Number	131218049-002	**Sampling Date**	12/11/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312659-001L / MW-1B	**Sampling Time**	10:45 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/18/2013	CRW	EPA 335.4	

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131218049
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312659
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131218049-003	**Sampling Date**	12/11/2013	**Date/Time Received**	12/17/2013 12:36 PM
Client Sample ID	1312659-001M / MW-1B	**Sampling Time**	10:45 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Total P	3.25	mg/L	0.1	1/7/2014	CRW	SM4500PF	

Authorized Signature

John Coddington, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: C13120620-001
Client Sample ID: 1312659-001O MW-1B

Report Date: 12/23/13
Collection Date: 12/11/13 10:45
DateReceived: 12/18/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Radon 222	676	pCi/L				D5072-92	12/18/13 18:01 / dpb
Radon 222 precision (±)	122	pCi/L				D5072-92	12/18/13 18:01 / dpb
Radon 222 MDC	195	pCi/L				D5072-92	12/18/13 18:01 / dpb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Hall Environmental
Report Date: 12/23/13
Project: Not Indicated
Work Order: C13120620

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D5072-92									Batch: R181914	
Sample ID: C13120621-001ADUP	3	Sample Duplicate				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		1.6	pCi/L					210	20	UR
Radon 222 precision (±)		75.1	pCi/L							
Radon 222 MDC		130	pCi/L							
- The Sample and the Duplicate are both below the MDC. The RPD is acceptable.										
Sample ID: MB-R181914	3	Method Blank				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		7	pCi/L							U
Radon 222 precision (±)		30	pCi/L							
Radon 222 MDC		50	pCi/L							
Sample ID: LCS-R181914		Laboratory Control Sample				Run: PACKARD 3100TR_131218A			12/18/13 18:01	
Radon 222		552	pCi/L		96	80	120			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312659
Pace Project No.: 30109787

Sample: 1312659-001 MW-1B **Lab ID: 30109787001** Collected: 12/11/13 10:45 Received: 12/17/13 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**2.00 ± 0.722 (0.566)**	pCi/L	12/27/13 12:46	13982-63-3	
Radium-228	EPA 904.0	**0.711 ± 0.402 (0.727)**	pCi/L	12/31/13 09:22	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312659
Pace Project No.: 30109787

QC Batch: RADC/18095
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30109787001

METHOD BLANK: 671140
Matrix: Water
Associated Lab Samples: 30109787001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.291 ± 0.271 (0.728)	pCi/L	12/27/13 11:20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312659
Pace Project No.: 30109787

QC Batch: RADC/18094
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30109787001

METHOD BLANK: 671139
Matrix: Water
Associated Lab Samples: 30109787001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.177 ± 0.225 (0.479)	pCi/L	12/31/13 09:21	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

WO#: **1312659**

all Environmental Analysis Laboratory, Inc.

22-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449740** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

ample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15612**	RunNo: **15612**
Prep Date:	Analysis Date: **12/19/2013**	SeqNo: **449741** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	49	1.0	50.00	0	97.2	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.4	85	115			
Copper	0.48	0.0060	0.5000	0	96.7	85	115			
Magnesium	49	1.0	50.00	0	98.0	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Potassium	48	1.0	50.00	0	95.1	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	48	1.0	50.00	0	95.2	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453037** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Iron	ND	0.020								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15707**	RunNo: **15707**
Prep Date:	Analysis Date: **12/23/2013**	SeqNo: **453038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	107	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.027	0.0010	0.02500	0	106	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.4	85	115			
Lead	0.026	0.0010	0.02500	0	105	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
enic	ND	0.0010								
ıd	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15909**	RunNo: **15909**
Prep Date:	Analysis Date: **1/6/2014**	SeqNo: **458864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.028	0.0010	0.02500	0	111	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.027	0.0010	0.02500	0	109	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R15934**	RunNo: **15934**
Prep Date:	Analysis Date: **1/7/2014**	SeqNo: **459487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-11064**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **11064**	RunNo: **15897**
Prep Date: **1/3/2014**	Analysis Date: **1/3/2014**	SeqNo: **458393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-11064**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **11064**	RunNo: **15897**
Prep Date: **1/3/2014**	Analysis Date: **1/3/2014**	SeqNo: **458394** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.9	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447258** 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								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.7	90	110			
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.4	90	110			
Sulfate	9.5	0.50	10.00	0	95.4	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.2	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447268** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.97	0.10	1.000	0	97.2	90	110			
Chloride	4.6	0.50	5.000	0	92.6	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.4	90	110			
Sulfate	12	0.50	12.50	0	93.9	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R15551**	RunNo: **15551**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **447280** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	97.6	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.2	90	110			
Sulfate	20	0.50	20.00	0	98.5	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1312659**

;all Environmental Analysis Laboratory, Inc.

22-Jan-14

Client: Cyrq Energy Inc
Project: Lightning Dock CYRQ ENERGY

Sample ID **A6** SampType: **CCV_6** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/16/2013** SeqNo: **447292** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	2.400	0	98.4	90	110			
Chloride	12	0.50	12.00	0	101	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	100	90	110			
Sulfate	31	0.50	30.00	0	102	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/17/2013** SeqNo: **447304** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.94	0.10	1.000	0	93.6	90	110			
Chloride	4.6	0.50	5.000	0	92.5	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.4	90	110			

ample ID **A5** SampType: **CCV_5** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/17/2013** SeqNo: **447316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.10	1.600	0	96.9	90	110			
Chloride	7.7	0.50	8.000	0	96.8	90	110			
Phosphorus, Orthophosphate (As P	7.8	0.50	8.000	0	97.3	90	110			
Sulfate	20	0.50	20.00	0	98.1	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A4** SampType: **CCV_4** TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC** Batch ID: **R15551** RunNo: **15551**
Prep Date: Analysis Date: **12/17/2013** SeqNo: **447327** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.95	0.10	1.000	0	95.2	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	12	0.50	12.50	0	94.1	90	110			
Nitrate+Nitrite as N	4.8	0.20	5.000	0	95.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10820**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBW**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447701** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	1.0								

Sample ID **LCS-10820**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSW**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	5.0	1.0	5.000	0	99.8	80	120			

Sample ID **LCSD-10820**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **10820**	RunNo: **15560**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	4.7	1.0	5.000	0	94.8	80	120	5.14	20	

Qualifiers:

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- E Value above quantitation range
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- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10822**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447079** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10822**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447080** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	113	70	130			

Sample ID **LCSD-10822**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **10822**	RunNo: **15527**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **447081** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	108	70	130	4.52	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10796**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447133** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.2	17	123			
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	22.6	113			

Sample ID **LCS-10796**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW**	Batch ID: **10796**	RunNo: **15544**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447135** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	63.8	18.6	134			
Aroclor 1260	3.8	1.0	5.000	0	75.7	35.7	137			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	17	123			
Surr: Tetrachloro-m-xylene	1.6		2.500		64.4	22.6	113			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
[illegible]omomethane	ND	3.0								
[illegible]utanone	ND	10								
[illegible]rbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.4	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.9	70	130			

Sample ID **100ng lcs200ng aca**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R15529**	RunNo: **15529**
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	20	1.0	20.00	0	102	82.2	124			
Chlorobenzene	20	1.0	20.00	0	99.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **100ng lcs200ng aca**	SampType: **LCS**			TestCode: **EPA Method 8260B: VOLATILES**					
Client ID: **LCSW**	Batch ID: **R15529**			RunNo: **15529**					
Prep Date:	Analysis Date: **12/16/2013**			SeqNo: **446646**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	9.0		10.00		90.3	70	130			
Surr: Toluene-d8	9.4		10.00		94.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**	
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	40								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-10800**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446854** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
litrosodiphenylamine	ND	10								
aphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	90		200.0		45.2	22.7	98			
Surr: Phenol-d5	79		200.0		39.3	23.4	74.9			
Surr: 2,4,6-Tribromophenol	130		200.0		63.8	23.3	111			
Surr: Nitrobenzene-d5	64		100.0		64.0	36.8	111			
Surr: 2-Fluorobiphenyl	68		100.0		68.2	38.3	110			
Surr: 4-Terphenyl-d14	75		100.0		74.7	52.1	116			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **lcs-10800**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446855** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	89.4	48	101			
4-Chloro-3-methylphenol	190	10	200.0	0	94.8	47.9	109			
2-Chlorophenol	180	10	200.0	0	92.5	40	105			
1,4-Dichlorobenzene	96	10	100.0	0	96.4	40.8	94.3			S
2,4-Dinitrotoluene	87	10	100.0	0	86.8	28.3	131			
N-Nitrosodi-n-propylamine	100	10	100.0	0	101	46.2	119			
4-Nitrophenol	88	10	200.0	0	43.8	10.5	67.9			
Pentachlorophenol	130	20	200.0	0	65.2	22.4	81.1			
Phenol	110	10	200.0	0	54.2	21.4	72.9			
Pyrene	83	10	100.0	0	83.0	46.9	109			
1,2,4-Trichlorobenzene	93	10	100.0	0	93.3	43.1	98.4			
Surr: 2-Fluorophenol	120		200.0		59.7	22.7	98			
Surr: Phenol-d5	110		200.0		53.4	23.4	74.9			
Surr: 2,4,6-Tribromophenol	180		200.0		91.9	23.3	111			
Surr: Nitrobenzene-d5	81		100.0		81.5	36.8	111			
Surr: 2-Fluorobiphenyl	85		100.0		84.8	38.3	110			
Surr: 4-Terphenyl-d14	88		100.0		87.8	52.1	116			

Sample ID **lcsd-10800**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **10800**	RunNo: **15530**
Prep Date: **12/16/2013**	Analysis Date: **12/16/2013**	SeqNo: **446856** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	90	10	100.0	0	89.9	48	101	0.558	25	
4-Chloro-3-methylphenol	180	10	200.0	0	92.1	47.9	109	2.84	32.7	
2-Chlorophenol	170	10	200.0	0	83.9	40	105	9.78	20	
1,4-Dichlorobenzene	83	10	100.0	0	82.6	40.8	94.3	15.4	20	
2,4-Dinitrotoluene	81	10	100.0	0	80.8	28.3	131	7.11	29.9	
N-Nitrosodi-n-propylamine	90	10	100.0	0	90.4	46.2	119	10.9	23.1	
4-Nitrophenol	78	10	200.0	0	39.0	10.5	67.9	11.6	40.5	
Pentachlorophenol	110	20	200.0	0	54.5	22.4	81.1	17.8	37.3	
Phenol	92	10	200.0	0	46.2	21.4	72.9	15.9	20	
Pyrene	83	10	100.0	0	83.1	46.9	109	0.193	26.5	
1,2,4-Trichlorobenzene	84	10	100.0	0	83.8	43.1	98.4	10.7	27.2	
Surr: 2-Fluorophenol	110		200.0		55.0	22.7	98	0	0	
Surr: Phenol-d5	93		200.0		46.5	23.4	74.9	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		79.0	23.3	111	0	0	
Surr: Nitrobenzene-d5	81		100.0		80.8	36.8	111	0	0	
Surr: 2-Fluorobiphenyl	83		100.0		82.9	38.3	110	0	0	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID	**lcsd-10800**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **10800**		RunNo: **15530**					
Prep Date:	**12/16/2013**	Analysis Date: **12/16/2013**		SeqNo: **446856**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	83		100.0		82.9	52.1	116	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10797**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447054** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	5.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	21		20.00		104	24.5	139			

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	41	2.0	80.00	0	51.6	43.8	96.9			
1-Methylnaphthalene	36	2.0	80.20	0	44.8	41.3	87.3			
2-Methylnaphthalene	34	2.0	80.00	0	42.0	36.6	89.6			
Acenaphthylene	46	2.5	80.20	0	57.7	43.6	103			
Acenaphthene	37	5.0	80.00	0	46.1	42.4	87.6			
Fluorene	3.9	0.80	8.020	0	48.1	40.5	93.6			
Phenanthrene	2.2	0.60	4.020	0	53.7	43.9	111			
Anthracene	2.2	0.60	4.020	0	56.0	44.3	103			
Fluoranthene	4.6	0.30	8.020	0	57.5	43.5	109			
Pyrene	4.8	0.30	8.020	0	59.7	32.6	103			
Benz(a)anthracene	0.46	0.070	0.8020	0	57.4	43	114			
Chrysene	2.2	0.20	4.020	0	54.0	40.2	100			
Benzo(b)fluoranthene	0.57	0.10	1.002	0	56.9	44.4	118			
Benzo(k)fluoranthene	0.29	0.070	0.5000	0	58.0	41.5	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **LCS-10797**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **10797**	RunNo: **15541**
Prep Date: **12/16/2013**	Analysis Date: **12/17/2013**	SeqNo: **447058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.28	0.070	0.5020	0	55.8	34.5	118			
Dibenz(a,h)anthracene	0.59	0.12	1.002	0	58.9	38.3	107			
Benzo(g,h,i)perylene	0.55	0.12	1.000	0	55.0	38.4	110			
Indeno(1,2,3-cd)pyrene	1.3	0.25	2.004	0	64.4	42.4	113			
Surr: Benzo(e)pyrene	15		20.00		74.8	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10891**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449210** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10891**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10891**	RunNo: **15597**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449211** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	103	73.7	135			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **mb-1**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446604**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID **lcs-1**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446605**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.4	90	110			

Sample ID **mb-2**	SampType: **MBLK**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446624**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

ample ID **lcs-2**	SampType: **LCS**	TestCode: **SM2320B: Alkalinity**							
lient ID: **LCSW**	Batch ID: **R15528**	RunNo: **15528**							
Prep Date:	Analysis Date: **12/16/2013**	SeqNo: **446625**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312659**

22-Jan-14

Client: Cyrq Energy Inc

Project: Lightning Dock CYRQ ENERGY

Sample ID **MB-10843**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **10843**	RunNo: **15605**
Prep Date: **12/17/2013**	Analysis Date: **12/19/2013**	SeqNo: **449401** 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-10843**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **10843**	RunNo: **15605**
Prep Date: **12/17/2013**	Analysis Date: **12/19/2013**	SeqNo: **449402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1050	20.0	1000	0	105	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312659 | RcptNo: 1

Received by/date: KS 12/16/13

Logged By: Anne Thorne 12/16/2013 9:05:00 AM Anne Thorne

Completed By: Anne Thorne 12/16/2013 Anne Thorne

Reviewed By: AT 12/16/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 8 (<2 or >12 unless noted)

Adjusted? _____

Checked by: AT 12/16/13

Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: AMEC E&I, Inc.

Mailing Address: 8519 Jefferson ALBUQUERQUE, NM 87113

Phone #: 505-821-1801

email or Fax#: David.Janney@AMEC.com

QA/QC Package:

☑ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☐ Rush _____

Project Name: (Lightning Dock) CYRQ ENERGY

Project #: 11-517-00102

Project Manager: DAVID Janney

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.9

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1312459	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attached List & 12/16/13				Air Bubbles (Y or N)
12-11-13	10:45	Aqueous	MW-1B			-001												X	X			

Date: 12-12-13 Time: 17:00 Relinquished by: Jeff Cotter Received by: Date Time

Date: 12-16-13 Time: 0905 Relinquished by: Jeff Cotter Received by: Date 12/16/13 Time 0905

Remarks: SEE ATTACHED List for Lightning Dock GeoThermal Project. PO# invoice CYRQ & 12/16/13

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

January 08, 2014

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113
TEL: (505) 796-7276
FAX

RE: Lightning Dock Geothermal Groundwater Quality Mon OrderNo.: 1312725

Dear David Janney:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/16/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1312725**
Date Reported: **1/8/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-1
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 4:30:00 PM
Lab ID: 1312725-001
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 5:23:43 PM	10868
TOTAL PHENOLICS BY SW-846 9067							Analyst: **SCC**
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Analytical Report
Lab Order **1312725**
Date Reported: **1/8/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 11:00:00 AM
Lab ID: 1312725-002
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 5:37:27 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-2B
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 11:30:00 AM
Lab ID: 1312725-003
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 5:51:14 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-3
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/10/2013 10:30:00 PM
Lab ID: 1312725-004
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:05:07 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	10	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-4
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/9/2013 6:00:00 PM
Lab ID: 1312725-005
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:18:58 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-5
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/9/2013 12:00:00 PM
Lab ID: 1312725-006
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **LRW**	
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:32:39 PM	10868
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMEC
Client Sample ID: MW-6
Project: Lightning Dock Geothermal Groundwater
Collection Date: 12/9/2013 3:00:00 PM
Lab ID: 1312725-007
Matrix: AQUEOUS
Received Date: 12/16/2013 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: **LRW**
1,2-Dibromoethane	ND	0.010		µg/L	1	12/18/2013 6:46:28 PM	10868
TOTAL PHENOLICS BY SW-846 9067							Analyst: **SCC**
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/19/2013	10893

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

Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131220064
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312725
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131220064-001	**Sampling Date**	12/10/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-001C / MW-1	**Sampling Time**	4:30 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number	131220064-002	**Sampling Date**	12/10/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-002C / MW-2	**Sampling Time**	11:00 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number	131220064-003	**Sampling Date**	12/10/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-003C / MW-2B	**Sampling Time**	11:30 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number	131220064-004	**Sampling Date**	12/10/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-004C / MW-3	**Sampling Time**	10:30 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number	131220064-005	**Sampling Date**	12/9/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-005C / MW-4	**Sampling Time**	6:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	131220064
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1312725
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	131220064-006	**Sampling Date**	12/9/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-006C / MW-5	**Sampling Time**	12:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Sample Number	131220064-007	**Sampling Date**	12/9/2013	**Date/Time Received**	12/20/2013 2:09 PM
Client Sample ID	1312725-007C / MW-6	**Sampling Time**	3:00 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	12/23/2013	ETL	EPA 335.4	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312725
Pace Project No.: 30110107

Sample: 1312725-001 MW-1 **Lab ID: 30110107001** Collected: 12/10/13 16:30 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.285 ± 0.350 (0.571)**	pCi/L	01/06/14 13:54	13982-63-3	
Radium-228	EPA 904.0	**0.888 ± 0.456 (0.799)**	pCi/L	01/07/14 14:05	15262-20-1	

Sample: 1312725-002 MW-2 **Lab ID: 30110107002** Collected: 12/10/13 11:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.266 ± 0.377 (0.638)**	pCi/L	01/06/14 14:09	13982-63-3	
Radium-228	EPA 904.0	**0.0585 ± 0.308 (0.702)**	pCi/L	01/07/14 15:50	15262-20-1	

Sample: 1312725-003 MW-2B **Lab ID: 30110107003** Collected: 12/10/13 11:30 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.183 ± 0.312 (0.550)**	pCi/L	01/06/14 13:54	13982-63-3	
Radium-228	EPA 904.0	**0.468 ± 0.385 (0.767)**	pCi/L	01/07/14 15:02	15262-20-1	

Sample: 1312725-004 MW-3 **Lab ID: 30110107004** Collected: 12/10/13 10:30 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.102 ± 0.375 (0.720)**	pCi/L	01/06/14 14:24	13982-63-3	
Radium-228	EPA 904.0	**0.156 ± 0.270 (0.590)**	pCi/L	01/07/14 15:02	15262-20-1	

Sample: 1312725-005 MW-4 **Lab ID: 30110107005** Collected: 12/09/13 18:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**1.32 ± 0.615 (0.664)**	pCi/L	01/06/14 14:09	13982-63-3	
Radium-228	EPA 904.0	**0.542 ± 0.396 (0.772)**	pCi/L	01/07/14 15:02	15262-20-1	

Sample: 1312725-006 MW-5 **Lab ID: 30110107006** Collected: 12/09/13 12:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.305 ± 0.401 (0.667)**	pCi/L	01/06/14 13:54	13982-63-3	
Radium-228	EPA 904.0	**0.333 ± 0.452 (0.966)**	pCi/L	01/07/14 17:06	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 1312725
Pace Project No.: 30110107

Sample: 1312725-007 MW-6 **Lab ID: 30110107007** Collected: 12/09/13 15:00 Received: 12/20/13 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.140 ± 0.305 (0.562)**	pCi/L	01/06/14 14:09	13982-63-3	
Radium-228	EPA 904.0	**2.53 ± 0.949 (1.39)**	pCi/L	01/07/14 15:50	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312725
Pace Project No.: 30110107

QC Batch: RADC/18162 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

METHOD BLANK: 673486 Matrix: Water
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.195 ± 0.271 (0.686)	pCi/L	01/06/14 13:51	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1312725
Pace Project No.: 30110107

QC Batch: RADC/18180 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

METHOD BLANK: 674062 Matrix: Water
Associated Lab Samples: 30110107001, 30110107002, 30110107003, 30110107004, 30110107005, 30110107006, 30110107007

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	-0.113 ± 0.319 (0.769)	pCi/L	01/07/14 12:48	

REPORT OF LABORATORY ANALYSIS

QC SUMMARY REPORT

WO#: **1312725**

all Environmental Analysis Laboratory, Inc.

08-Jan-14

Client: AMEC

Project: Lightning Dock Geothermal Groundwater Qualit

Sample ID **MB-10868**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **10868**	RunNo: **15596**
Prep Date: **12/18/2013**	Analysis Date: **12/18/2013**	SeqNo: **449514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID **LCS-10868**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **10868**	RunNo: **15596**
Prep Date: **12/18/2013**	Analysis Date: **12/18/2013**	SeqNo: **449515** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1312725**

08-Jan-14

Client: AMEC

Project: Lightning Dock Geothermal Groundwater Qualit

Sample ID **MB-10893**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **10893**	RunNo: **15599**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449235** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID **LCS-10893**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **10893**	RunNo: **15599**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449236** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	116	73.7	135			

Sample ID **LCSD-10893**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSS02**	Batch ID: **10893**	RunNo: **15599**
Prep Date: **12/19/2013**	Analysis Date: **12/19/2013**	SeqNo: **449248** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	110	73.7	135	5.63	21.4	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection 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: AMEC | Work Order Number: 1312725 | RcptNo: 1

Received by/date: KS 12/16/13

Logged By: Anne Thorne 12/16/2013 9:05:00 AM Anne Thorne

Completed By: Anne Thorne 12/17/2013 Anne Thorne

Reviewed By: MG 12/18/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

# of preserved bottles checked for pH: 2 (4) 7 (<2 or >12 unless noted)

Adjusted? NO

Checked by: KMS 12/18/13

Special Handling (if applicable)

16. 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: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			

Chain-of-Custody Record

Client: AMEC

Mailing Address: 6519 Jefferson St ABQ, NM 87113

Phone #: 505 821-1801

email or Fax#: david.janney@amec.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Lightning Dock Geothermal Groundwater Quality Mon.

Project #: 11-517-00102.06

Project Manager: David Janney

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.9

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. 1312725	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA) 12/16/13	Ra 226 / 228	Cyanide	Phenol		Air Bubbles (Y or N)
12/10/13	16:30	water	MW-1	5	HNO3 H2SO4 NaOH	-001					X							X	X	X		
	11:00		MW-2	5		-002					X							X	X	X		
	11:30		MW-2B	5		-003					X							X	X	X		
	22:30		MW-3	5		-004					X							X	X	X		
12/9/13	18:00		MW-4	5		-005					X							X	X	X		
12/9/13	12:00		MW-5	5		-006					X							X	X	X		
12/9/13	15:00		MW-6	5		-007					X							X	X	X		

Date	Time	Relinquished by:	Received by:	Date	Time
12/12/13	16:00	Erin D. Koenig			
12/16/13	0905			12/16/13	0905

Remarks:
Per DJ invoice CKRQ/A 12/16/13

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.

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-1A	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	11:45	11/25/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	X Other: Bailer	X YSI 556			
85.00		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
67.86 BTOC	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
~18.6	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
	X Other: Bailer	___ Other			
~ 2.8		Serial No.			
Stick-up (ft.) / Screen Int. 60-85 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	9	55.2 / 21.15	2119	5.7	8.69	-47.6	NA	NA	NA	Cloudy, gray, brown

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals - U-Rb-S (field filtered), Total Metals u-Hg, Anions, TDS, PAH, PCB

P, 8260

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

Approximately 6 gallons removed by driller during development.

PPE Level: B C D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-1A	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	pH meter (temperature): X YSI 556	EDK	16:30	12/10/2013
Casing Diameter (in.)	___ Peristaltic Pump ___ Dedicated Pump	___ Orion ___ Other:	**Meter Calibration**		
1.913	___ 2" Grundfos ___ Waterra Pump	Serial No.:	Time:		
Total Well Depth (ft.)	___ Geotech Pump X Other: Bailer	Conductivity Meter: X YSI 556	pH 4 = 4.00 at 15 °C Lot # Exp.		
85.00		___ Orion ___ Other:	pH 7 = 7.05 at 15 °C Lot # Exp		
Static Water Level (ft.)	Serial Number: **Sample Equipment**	Serial No.:	pH 10 = 10.12 at 15 °C Lot # Exp.		
67.55	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	Dissolved Oxygen Meter: X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump ___ Dedicated Pump	___ Other Serial No.	Conductance Standard: 1413 umhos/cm Other:		
~18.90	___ 2" Grundfos ___ Waterra Pump	ORP Meter:	Calibrated to 1413 umhos/cm at 15		
Casing Volume (gal.)	___ Geotech Pump X Other: Bailer	X YSI 556 ___ Other	Lot # Exp. Dissolved Oxygen:		
2.82		Serial No.	Calibrated to 8.67 mg/l at 15 °C		
Stick-up 1.45 (ft.) / **Screen Int.** 60-85 (ft.)	Serial Number: **Filtration Equipment:**	Water Level Meter: ___ Keck	Redox: Calibrated to 229 mV at 15 °C		
Purge Containerized:	0.45 *Micron Filter*	X Other:	Lot # Exp.		
X Yes ___ No	Brand: Geotech	Serial No.	Sample Depth (feet)	Time:	
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	2.8	62.6 / 33.8	2232	2.4	7.53	-2.4		NA	NA	Cloudy brown
	5.6	60.5 / 38.8	2290	2.2	7.88	24.6		NA	NA	Cloudy brown
	8.5	63.4 / 34.2	2266	1.8	7.69	34.4		NA	NA	Cloudy brown

Analyses requested Full Suite Partial Suite (explain)

Ra 226/227, Rn, EDB, CN Phenol

PID/FID Readings

	Initial Readings:	*Sample Readings*
___ HNu	TOC: NA	TOC: NA
___ OVA	BZ: NA	BZ: NA
___ Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

PPE Level: B C D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-1B	___ 1.40" Bennett Pump	pH meter (temperature):	JC	9:25	12/11/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	X Other: Bailer	X YSI 556			
85.00		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
66.05	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
19.00	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
	X Other: Bailer	___ Other			
3.10		Serial No.			
Stick-up 1.30 (ft.) / Screen Int. 15-35 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # 3AF099 Exp. 06/15

pH 7 = _____ at _____ °C
Lot # 3AE725 Exp 05/15

pH 10 = _____ at _____ °C
Lot # 3AE634 Exp. 05/15

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C

Lot # 3AF774 Exp. 06/14

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # 3AE866 Exp. 02/14

Sample Depth (feet) | Time:

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
10:09	3.1	59	2544	3.5	7.88	-94.3				Murky brown
10:30	6.2	68	2234	0.60	7.95	-35.6				Murky brown
10:45	3.3	68.6	2893	1.8	7.96	-19.3				Murky brown

Analyses requested Full Suite Partial Suite (explain)

Dissolved metals - Rb-5 (field filtered), total metals U-hg, Anions, TDS, PAH, PCB, P, 8260, Ra 226/227, Rn EDB, CN, Phenol

PID/FID Readings

	Initial Readings:	Sample Readings
___ HNu	TOC: NA	TOC: NA
___ OVA	BZ: NA	BZ: NA
___ Microtip	Bkgd: NA	Bkgd: NA
Serial No.:		

Additional Comments:

Temp of water out of well: 164.6°F

PPE Level: B C D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Sampler's Initials	Time	Date
MW-2 & Dup	EDK	9:00**	11/25/2013

Purge Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- X Geotech Pump
- ___ Other:

Serial Number:

Sample Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- ___ Geotech Pump
- X Other: Bailer

Serial Number:

Filtration Equipment: 0.45 *Micron Filter*

Brand: Geotech

Analytical Equipment

pH meter (temperature):
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Conductivity Meter:
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Dissolved Oxygen Meter:
- X YSI 556
- ___ Other

Serial No.

ORP Meter:
- X YSI 556
- ___ Other

Serial No.

Water Level Meter:
- ___ Keck
- X Other: Geotech

Serial No.

Meter Calibration

Time:

pH 4 = ___ at ___ °C
Lot # Exp.

pH 7 = ___ at ___ °C
Lot # Exp

pH 10 = ___ at ___ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to ___ umhos/cm at ___ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to ___ mg/l at ___ °C

Redox:
Calibrated to ___ mV at ___ °C
Lot # Exp.

Casing Diameter (in.)	Total Well Depth (ft.)	Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up (ft.)	Screen Int. (ft.)
1.913	80.00	69.98 TOC	~11.5	1.70		55-80

Purge Containerized: X Yes ___ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet): Time:

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	11 gal	64.3 / 37.22	1704	2.34	8.14	10.5	NA	NA		Cloudy gray brown
	18 gal	64.1 / 37.5	1659	2.28	8.32	52.4	NA	NA		Cloudy gray brown
	24 gal	65.2 / 36.1	1650	2.36	8.24	57.7	NA	NA		Cloudy gray brown
	*29 gal	65.0 / 36.6	1703	2.93	8.59	36.2	NA	NA		Cloudy gray colorless
	35 gal	61.4 / 37.2	1683	2.40	8.22	41.5	NA	NA		Slightly cloudy gray colorless
		? / 37.3	1657	2.59	8.52	57	NA	NA		Slightly cloudy gray colorless

Analyses requested Full Suite Partial Suite (explain)

Dissolved metals (field filtered) - Rb-S, Total Metals-U-Hg, Anions, TDS, PAH, PCB, P, 8260

*Pump down for appx. 1-hour

Additional Comments: **Duplicate Sampled at this well simultaneously

Appx. 8 gallons removed by drillers during development.

PPE Level: D

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Sampler's Initials	Time	Date
MW-2 & Dup	EDK	11:00	12/10/2013

Purge Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- ___ Geotech Pump
- X Other: Bailer

Serial Number:

Sample Equipment
- ___ 1.40" Bennett Pump
- ___ 1.80" Bennett Pump
- ___ Peristaltic Pump
- ___ Dedicated Pump
- ___ 2" Grundfos
- ___ Waterra Pump
- ___ Geotech Pump
- X Other: Bailer

Serial Number:

Filtration Equipment: 0.45 *Micron Filter*

Brand: Geotech

Analytical Equipment

pH meter (temperature):
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Conductivity Meter:
- X YSI 556
- ___ Orion
- ___ Other:

Serial No.:

Dissolved Oxygen Meter:
- X YSI 556
- ___ Other

Serial No.

ORP Meter:
- X YSI 556
- ___ Other

Serial No.

Water Level Meter:
- ___ Keck
- X Other: Bailer

Serial No.

Meter Calibration

Time:

pH 4 = 4.002 at 15 °C
Lot # Exp.

pH 7 = 7.05 at 15 °C
Lot # Exp

pH 10 = 10.12 at 15 °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to 1413 umhos/cm at 15

Lot # Exp.

Dissolved Oxygen:
Calibrated to 8.67 mg/l at 15 °C

Redox:
Calibrated to 229 mV at 15 °C
Lot # Exp.

Casing Diameter (in.)	Total Well Depth (ft.)	Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up (ft.)	Screen Int. (ft.)
1.913	80.00	69.85	11.35	1.69	1.20	15-35

Purge Containerized: X Yes ___ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet) | Time:

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
		67.4 / 36.0	1744	2.93	6.58	117.1		NA	NA	Cloudy translucent brown
		67.2 / 33.9	1719	2.40	7.64	82.6		NA	NA	Cloudy translucent brown
		68.3 / 32.5	1725	2.65	7.85	77.5		NA	NA	Cloudy translucent brown

Analyses requested Full Suite Partial Suite (explain)

Ra226/227, Cyanide, 504.1, Phenols

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-3	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	22:00	11/24/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion	**Meter Calibration**		
	___ Dedicated Pump	___ Other:	Time:		
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump		pH 4 = ___ at ___ °C		
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:	Lot # Exp.		
	X Other: Bailer	X YSI 556			
80.00		___ Orion	pH 7 = ___ at ___ °C		
		___ Other:	Lot # Exp		
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment		pH 10 = ___ at ___ °C		
73.66 TOC	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:	Lot # Exp.		
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other	Conductance Standard: 1413 umhos/cm Other:		
	___ Dedicated Pump	Serial No.			
~7.8	___ 2" Grundfos		Calibrated to ___ umhos/cm at ___ °C		
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556	Lot # Exp.		
	X Other: Bailer	___ Other	Dissolved Oxygen:		
~1.2		Serial No.	Calibrated to ___ mg/l at ___ °C		
Stick-up (ft.) / **Screen Int.** 55-80 (ft.)	Serial Number:	Water Level Meter:	Redox:		
	Filtration Equipment:	___ Keck	Calibrated to ___ mV at ___ °C		
	0.45 *Micron Filter*	X Other: Geotech	Lot # Exp.		
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech		Sample Depth (feet)		Time: 22:00
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	4	73.9 / 32.2	1938	2.11	8.83	-65.1	NA	NA	NA	Cloudy gray brown
	5	75.1 / 34.5	1745	1.81	9.25	-89.7	NA	NA	NA	Cloudy gray brown
	6	74.2 / 23.7	1737	3.50	9.33	-75.6	NA	NA	NA	Cloudy gray brown
	7	71.0 / 22.1	1733	3.81	9.44	-88.1	NA	NA	NA	Cloudy gray brown
	8	74.9 / 26.3	1710	3.72	9.40	-152.7	NA	NA	NA	Cloudy gray brown
	9	77.2 / 25.6	1707	4.94	9.28	--	NA	NA	NA	Cloudy gray brown

Analyses requested Full Suite Partial Suite (explain)

Dissolved metals - Rb-S (field filtered, Total Metals - u-Hg, Anions, TDS, PAH, PCB, P, 8260

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: Approx. 3 gallons removed by drillers during development. Submersible pump no longer working

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-3	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	20:30	12/10/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	X Other: Bailer	X YSI 556			
80.00		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
73.24	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
7.85	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
	X Other: Bailer	___ Other			
1.17		Serial No.			
Stick-up / Screen Int.	Serial Number:	Water Level Meter:			
1.09 (ft.) / 55-80 (ft.)	**Filtration Equipment:**	___ Keck			
	0.45 *Micron Filter*	X Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4002 = 3.72 at 15 °C
Lot # 3AF099 Exp.

pH 7.05 = 7.43 at 15 °C
Lot # 3AE725 Exp

pH 10.12 = 9.67 at 15 °C
Lot # 3AE634 Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to 1413 umhos/cm at 15 °C

Lot # Exp.

Dissolved Oxygen:
Calibrated to 8.67 mg/l at 15 °C

Redox:
Calibrated to 229 mV at 15 °C
Lot # Exp.

Sample Depth (feet) | Time: 12:10

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	1.2	84.2 / 33.8	1870	1.59	8.11	-161.8	--	NA	NA	Cloudy Translucent
	2.4	84.7 / 42.0	1839	0.98	8.24	-173.6	--	NA	NA	Cloudy Translucent
	3.5	85.7 / 37.3	1861	1.27	8.64	-220.4	--	NA	NA	Cloudy Translucent

Analyses requested Full Suite Partial Suite (explain)

phenols, cynaide, 504.1, Ra 226/227

Additional Comments

PPE Level: D

PID/FID Readings

		Initial Readings:	Sample Readings:
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET
SVOA QC SAMPLE

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-4	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	14:35	11/24/2013
	___ 1.80" Bennett Pump	_X_ YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
	___ Dedicated Pump	___ Other:			
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
	X Other: Bailer	_X_ YSI 556			
~80'		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
67.66 TOC	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	_X_ YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
	___ Dedicated Pump	Serial No.			
~13.8	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	_X_ YSI 556			
	X Other: Bailer	___ Other			
2.10		Serial No.			

Stick-up	Screen Int.	Serial Number:	Water Level Meter:
1.38 (ft.)	55-80 (ft.)	**Filtration Equipment:**	___ Keck
		0.45 *Micron Filter*	_X_ Other: Geotech
Purge Containerized:			Serial No.
_X_ Yes ___ No		Brand: Geotech	

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved 0_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	22	44.9 / 34.1	3912	2.98	7.64	33.7	NA	NA	~1.3	Cloudy Brown
	26	45.4 / 38.1	3883	2.07	7.56	--	NA	NA		Cloudy Brown
	30	45.7 / 35.7	3901	1.91	7.47	77.5	NA	NA		Cloudy Brown
12:30	33	44.2 / 37.2	3812	1.87	7.48	75	NA	NA		Cloudy Brown
	35	45.2 / 37.7	3818	2.0	7.49	68.1	NA	NA		Cloudy Brown
		45.0 / 36.6	3786	1.74	7.48	66.1	NA	NA		Slightly cloudy colorless
	40	44.6 / 36.6	3773	2.0	7.49	63.4	NA	NA		
	43	44.6 / 36.7	3760	1.81	7.5	63.2	NA	NA		

Analyses requested (Full Suite) Partial Suite (explain)

Dissolved Metals - Rb - S (field filtered), Total Metals - u - Hg, Anions, TDS, PAH, PCB, P, 8260

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

Appx. 20 gallons removed by drillers during development

PPE Level: D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-4	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	18:00	12/9/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion	**Meter Calibration**		
	___ Dedicated Pump	___ Other:	Time:		
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump		pH 4 = ___ at ___ °C		
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:	Lot # 3AF099 Exp. 06/15		
	X Other: Bailer	X YSI 556			
80.00		___ Orion	pH 7 = ___ at ___ °C		
		___ Other:	Lot # 3AE725 Exp 05/15		
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment		pH 10 = ___ at ___ °C		
67.68 TOC	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:	Lot # 3AE634 Exp. 05/15		
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other	Conductance Standard: 1413 umhos/cm Other:		
	___ Dedicated Pump	Serial No.			
13.70	___ 2" Grundfos		Calibrated to ___ umhos/cm at ___ °C		
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556	Lot # 3AF774 Exp. 06/14		
	X Other: Bailer	___ Other	Dissolved Oxygen:		
2.05		Serial No.	Calibrated to ___ mg/l at ___ °C		
Stick-up / **Screen Int.**	Serial Number:	Water Level Meter:	Redox:		
1.38 (ft.) / 55-80 (ft.)	**Filtration Equipment:**	___ Keck	Calibrated to ___ mV at ___ °C		
	0.45 *Micron Filter*	X Other: Geotech	Lot # 3AE866 Exp. 02/14		
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech		Sample Depth (feet)		Time:
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	2	49.8 / 35.8	4234	1.84	7.19	36.3	--	NA	NA	Cloudy Brown
	4	50.2 / 35.7	3986	1.59	7.23	40.0	--	NA	NA	Cloudy Brown
	6	49.7 / 34.3	3955	1.35	7.27	38.6	--	NA	NA	Cloudy brown

Analyses requested Full Suite Partial Suite (explain)

Ra 226/227, Phenol, Cyanide, EDB

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

PPE Level: D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-5	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	12:15	11/24/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
1.913	___ Dedicated Pump	___ Other:			
	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	X Geotech Pump	Conductivity Meter:			
78.00	X Other: Bailer	X YSI 556			
		___ Orion			
		___ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
76.01 BTOC	**Sample Equipment**				
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
~3.5	___ Dedicated Pump	Serial No.			
	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
~0.5	X Other: Bailer	___ Other			
		Serial No.			
Stick-up (ft.) / **Screen Int.** 63-78 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other:			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) | Time:

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	~2	35.2	3773	1.9	8.1	144.2	NA	NA	~1.3 gpm w/pump	Yellowish gray, cloudy

Pumped dry then bailed dry, recovered an additional gallon total (after drillers).
Well did not go dry during sampling the following morning.

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals - Rb-S (field filtered), Total Metals -U-Hg, Anions, TDS, PAH, PCB, P, 8260

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:
< 1 gallon removed by drillers during development - bailed dry
PPE Level: B C D

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-5	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	12:00	12/9/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion			
1.913	___ Dedicated Pump	___ Other:			
	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump				
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:			
78.00	X Other: Bailer	X YSI 556			
		___ Orion			
Static Water Level (ft.)	Serial Number:	___ Other:			
76.05	**Sample Equipment**	Serial No.:			
	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other			
3.247	___ Dedicated Pump	Serial No.			
	___ 2" Grundfos				
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556			
0.485	X Other: Bailer	___ Other			
		Serial No.			
Stick-up 1.297 (ft.) / **Screen Int.** 63-78 (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	___ Keck			
	0.45 *Micron Filter*	X Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) | Time: 12:00

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Time	Volume Removed (gallons) (milliliters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	0.06	47.0 / 38.3	2865	2.5	7.09	31.1	NA	NA	NA	Cloudy yellowish gray
	1	48.1 / 36.8	2802	2.5	7.16	43.4	NA	NA	NA	Cloudy yellowish gray
	1.5	/ 29.7	2871	3.9	7.38	27.3	NA	NA	NA	Cloudy yellowish gray

Analyses requested Full Suite Partial Suite (explain)

Ra 226/227, Phenols, Cyanide, EOB

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: Well went dry a few times during purging/sampling

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-6	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	pH meter (temperature): ___ YSI 556	EDK	12:00	11/23/2013
Casing Diameter (in.)	___ Peristaltic Pump ___ Dedicated Pump	___ Orion ___ Other:	**Meter Calibration**		
1.913	___ 2" Grundfos ___ Waterra Pump	Serial No.:	Time:		
Total Well Depth (ft.)	___ Geotech Pump X Other: Bailer	Conductivity Meter: ___ YSI 556	pH 4 = ___ at ___ °C Lot # Exp.		
85.00		___ Orion ___ Other:	pH 7 = ___ at ___ °C Lot # Exp		
Static Water Level (ft.)	Serial Number:	Serial No.:	pH 10 = ___ at ___ °C		
67.12 TOC	**Sample Equipment** ___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	Dissolved Oxygen Meter: ___ YSI 556	Lot # Exp.		
Water Thickness (ft.)	___ Peristaltic Pump ___ Dedicated Pump	___ Other Serial No.	Conductance Standard: 1413 umhos/cm Other:		
~19.4	___ 2" Grundfos ___ Waterra Pump	ORP Meter:	Calibrated to ___ umhos/cm at ___ °C		
Casing Volume (gal.)	___ Geotech Pump X Other: Bailer	___ YSI 556 ___ Other	Lot # Exp. Dissolved Oxygen:		
~2.9		Serial No.	Calibrated to ___ mg/l at ___ °C		
Stick-up (ft.) / **Screen Int.** 60-85 (ft.)	Serial Number:	Water Level Meter:	Redox:		
	Filtration Equipment: 0.45 *Micron Filter*	___ Keck ___ Other:	Calibrated to ___ mV at ___ °C Lot # Exp.		
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech		Sample Depth (feet) (ft.)		Time:
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	25	48.9 / 34.1	2563	2.32	7.57	76.3	NA	NA	~ 1gal/mi	Cloudy brown
	29	47.8 / 35.9	2540	2.12	7.86	54.7	NA	NA		
	33	47.3 / 35.8	2505	2.09	7.78	41.5	NA	NA		
	37	48.2 / 35.3	2529	2.30	7.88	48.4	NA	NA		
	41	48.4 / 34.7	2534	2.42	7.87	68.2	NA	NA		
	45	48.3 / 35.7	2519	2.48	7.81	48.6	NA	NA		
	50	49.7 / 34.5	2518	2.77	7.78	43.9	NA	NA		Slightly cloudy, colorless
	55	48.2 / 36.7	2539	2.17	7.78	30.1	NA	NA		

Analyses requested (Full Suite) Partial Suite (explain)

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
MW-6	___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	pH meter (temperature): X YSI 556	EDK	15:00	12/9/2013
Casing Diameter (in.)	___ Peristaltic Pump ___ Dedicated Pump	___ Orion ___ Other:	**Meter Calibration**		
1.913	___ 2" Grundfos ___ Waterra Pump	Serial No.:	Time:		
Total Well Depth (ft.)	___ Geotech Pump X Other: Bailer	Conductivity Meter: X YSI 556	pH 4 = _____ at _____ °C Lot # Exp.		
85.00		___ Orion ___ Other:	pH 7 = _____ at _____ °C Lot # Exp		
Static Water Level (ft.)	Serial Number:	Serial No.:			
67.01	**Sample Equipment** ___ 1.40" Bennett Pump ___ 1.80" Bennett Pump	Dissolved Oxygen Meter: X YSI 556	pH 10 = _____ at _____ °C Lot # Exp.		
Water Thickness (ft.)	___ Peristaltic Pump ___ Dedicated Pump	___ Other Serial No.	Conductance Standard: 1413 umhos/cm Other:		
19.594	___ 2" Grundfos ___ Waterra Pump	ORP Meter:	Calibrated to _____ umhos/cm at _____ °C		
Casing Volume (gal.)	___ Geotech Pump X Other: Bailer	X YSI 556 ___ Other	Lot # Exp. Dissolved Oxygen:		
2.92		Serial No.	Calibrated to _____ mg/l at _____ °C		
Stick-up 1.6 (ft.) / **Screen Int.** 60-85 (ft.)	Serial Number:	Water Level Meter:	Redox:		
	Filtration Equipment:	___ Keck	Calibrated to _____ mV at _____ °C		
Purge Containerized:	0.45 *Micron Filter*	X Other: Geotech	Lot # Exp.		
X Yes ___ No	Brand: Geotech	Serial No.	Sample Depth (feet) (ft.)		Time:
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	3	48.8 / 24.8	2675	3.51	7.83	29.8	NA	NA	NA	Cloudy brown
	6	49.6 / 36.5	2551	1.87	7.70	54.4	NA	NA	NA	Cloudy brown
	9	48.8 / 36.7	2570	1.62	7.60	42.1	NA	NA	NA	Cloudy brown

Analyses requested Full Suite Partial Suite (explain)

Ra 226/226, Phenols, Cyanide, EDB

PID/FID Readings

		Initial Readings:	Sample Readings
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Additional Comments:

PPE Level: D

Condition of Well:

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 Page 1 of

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
INW-1	___ 1.40" Bennett Pump	pH meter (temperature):	EDK	17:00	12/20/2013
	___ 1.80" Bennett Pump	X YSI 556			
Casing Diameter (in.)	___ Peristaltic Pump	___ Orion	**Meter Calibration**		
	___ Dedicated Pump	___ Other:	Time:		
1.913	___ 2" Grundfos	Serial No.:			
	___ Waterra Pump		pH 4 = ___ at ___ °C		
Total Well Depth (ft.)	___ Geotech Pump	Conductivity Meter:	Lot # Exp.		
	X Other: Bailer	X YSI 556			
600.00		___ Orion	pH 7 = ___ at ___ °C		
		___ Other:	Lot # Exp		
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment		pH 10 = ___ at ___ °C		
77.10	___ 1.40" Bennett Pump	Dissolved Oxygen Meter:	Lot # Exp.		
	___ 1.80" Bennett Pump	X YSI 556			
Water Thickness (ft.)	___ Peristaltic Pump	___ Other	Conductance Standard: 1413 umhos/cm Other:		
	___ Dedicated Pump	Serial No.			
524.780	___ 2" Grundfos		Calibrated to ___ umhos/cm at ___ °C		
	___ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	___ Geotech Pump	X YSI 556	Lot # Exp.		
	X Other: Bailer	___ Other	Dissolved Oxygen:		
78.36		Serial No.	Calibrated to ___ mg/l at ___ °C		
Stick-up / **Screen Int.**	Serial Number:	Water Level Meter:	Redox:		
1.9 (ft.) / 570-590 (ft.)	**Filtration Equipment:**	___ Keck	Calibrated to ___ mV at ___ °C		
	0.45 *Micron Filter*	X Other: Geotech	Lot # Exp.		
Purge Containerized:		Serial No.			
X Yes ___ No	Brand: Geotech		Sample Depth (feet) (ft.)		Time:
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Time	Volume Removed (gallons)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
	~80	71.0 / 33.17	3660	1.51	9.78	20.7				
	~125	28.0 / 36.7	3642	1.18	9.86	-74.0				
	~165	29.6	2277	2.11	9.82	-53.6				

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals-Rb-S (Field Filtered) / Total Metals U-Hg, PAH, PCB, P, 8260

Ra 226/226, Phenol, EDB, RN,

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page** 1 of

Well No.	Sampler's Initials	Time	Date
LDG 53-7	JC/EDK	14:00	12/13/2013

Purge Equipment
- ____ 1.40" Bennett Pump
- ____ 1.80" Bennett Pump
- ____ Peristaltic Pump
- ____ Dedicated Pump
- ____ 2" Grundfos
- ____ Waterra Pump
- ____ Geotech Pump
- ____ Other: Bailer

Serial Number:

Sample Equipment
- ____ 1.40" Bennett Pump
- ____ 1.80" Bennett Pump
- ____ Peristaltic Pump
- ____ Dedicated Pump
- ____ 2" Grundfos
- ____ Waterra Pump
- ____ Geotech Pump
- ____ Other: Bailer

Serial Number:

Filtration Equipment: 0.45 *Micron Filter*

Brand: Geotech

Analytical Equipment

pH meter (temperature):
- ____ YSI 556
- ____ Orion
- ____ Other:

Serial No.:

Conductivity Meter:
- ____ YSI 556
- ____ Orion
- ____ Other:

Serial No.:

Dissolved Oxygen Meter:
- ____ YSI 556
- ____ Other

Serial No.

ORP Meter:
- ____ YSI 556
- ____ Other

Serial No.

Water Level Meter:
- ____ Keck
- ____ Other: Geotech

Serial No.

Meter Calibration

Time:

pH 4 = ____ at ____ °C
Lot # Exp.

pH 7 = ____ at ____ °C
Lot # Exp

pH 10 = ____ at ____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to ____ umhos/cm at ____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to ____ mg/l at ____ °C

Redox:
Calibrated to ____ mV at ____ °C
Lot # Exp.

Static Water Level (ft.)	Water Thickness (ft.)	Casing Volume (gal.)	Stick-up	Screen Int.
39.55			8' 4" (ft.)	(ft.)

Purge Containerized: X Yes ____ No

Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)

Sample Depth (feet) (ft.) Time:

Time	Volume Removed (liters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
13:11	1	2.25	634	7.09	6.77	61.3		40.24	NA	Clear
13:35	2.5	3.86	1020	2.05	6.51	58.7		40.38	NA	Clear
13:50	4	2.07	582	2.07	6.67	14.1		40.50		Clear
								40.68		

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals-12b-S (Field Filtered) / Total Metals U-Hg, PAH, PCB, P, 8260

Ra 226/226, Phenol, EDB, RN,

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

amec

Task: Lightning Dock Geothermal Monitoring

GROUNDWATER SAMPLING FIELD DATA SHEET

Job No.: 11-517-00102 **Page 1 of**

Well No.	Purge Equipment	Analytical Equipment	Sampler's Initials	Time	Date
LDG 63-7	____ 1.40" Bennett Pump	pH meter (temperature):	EDK	13:00	12/20/2013
	____ 1.80" Bennett Pump	____ YSI 556			
Casing Diameter (in.)	____ Peristaltic Pump	____ Orion			
	____ Dedicated Pump	____ Other:			
2	____ 2" Grundfos	Serial No.:			
	____ Waterra Pump				
Total Well Depth (ft.)	____ Geotech Pump	Conductivity Meter:			
	____ Other: Bailer	____ YSI 556			
		____ Orion			
		____ Other:			
Static Water Level (ft.)	Serial Number:	Serial No.:			
	Sample Equipment				
	____ 1.40" Bennett Pump	Dissolved Oxygen Meter:			
	____ 1.80" Bennett Pump	____ YSI 556			
Water Thickness (ft.)	____ Peristaltic Pump	____ Other			
	____ Dedicated Pump	Serial No.			
	____ 2" Grundfos				
	____ Waterra Pump	ORP Meter:			
Casing Volume (gal.)	____ Geotech Pump	____ YSI 556			
	____ Other: Bailer	____ Other			
		Serial No.			
Stick-up (ft.) / **Screen Int.** (ft.)	Serial Number:	Water Level Meter:			
	Filtration Equipment:	____ Keck			
	0.45 *Micron Filter*	____ Other: Geotech			
Purge Containerized:		Serial No.			
X Yes ____ No	Brand: Geotech				
	Casing Volume multipliers: 1"=(.04) 2"=(.16) 3"=(.37) 4"=(.65)				

Meter Calibration

Time:

pH 4 = _____ at _____ °C
Lot # Exp.

pH 7 = _____ at _____ °C
Lot # Exp

pH 10 = _____ at _____ °C
Lot # Exp.

Conductance Standard: 1413 umhos/cm Other:

Calibrated to _____ umhos/cm at _____ °C
Lot # Exp.

Dissolved Oxygen:
Calibrated to _____ mg/l at _____ °C

Redox:
Calibrated to _____ mV at _____ °C
Lot # Exp.

Sample Depth (feet) (ft.) | Time:

Time	Volume Removed (liters)	Temp (°C) (+/- 3%)	Conductivity (umhos/cm) (+/- 3%)	Dissolved O_2 (mg/l) (+/- 10%)	pH (+/- 0.1)	ORP (mV) (+/- 10)	Turbidity (NTU) (+/- 10%)	Water Level (ft bgs)	Pump Rate (gpm) (ml/m)	Visual Description
13:30	2.5	56.1 / 35.38	1247	1.08	9.19	-3.1	--	NA	NA	Slightly cloudy, with dark sediment
15:00	~5	65.6 / 37.56	1266	1.00	9.64	28.6	--	NA	NA	Colorless, slight sheen

Analyses requested Full Suite Partial Suite (explain)

Dissolved Metals-12b-S (Field Filtered) / Total Metals U-Hg, PAH, PCB, P, 8260
Ra 226/226, Phenol, EDB, RN,

Additional Comments: ~ 7 gallons removed by drillers during development

PPE Level: D

PID/FID Readings

		Initial Readings:	*Sample Readings*
NA	HNu	TOC: NA	TOC: NA
NA	OVA	BZ: NA	BZ: NA
NA	Microtip	Bkgd: NA	Bkgd: NA

Serial No.:

Condition of Well: New

Signature:

Mr. Carl Chavez, CHMM
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3490
CarlJ.Chavez@state.nm.us

October 25, 2013

RE: Form G-103 for Geothermal Injection Well LDG 55-7 for Lightning Dock Geothermal HI-01, LLC, Hidalgo County, New Mexico

Dear Mr. Chavez:

On behalf of Lightning Dock Geothermal HI-01, LLC, AMEC Environment & Infrastructure, Inc. submits the attached Form G-103 (subsequent sundry notice) and circular chart for the casing integrity test recently conducted on the above referenced geothermal injection well for the Lightning Dock Geothermal project located in Hidalgo County, New Mexico. The down hole work was performed by United Drilling of Roswell, New Mexico and Capuano Engineering Consultants provided oversight on the test. We are pleased to report that the well held pressure to at least 1000 psi for the required test duration.

We have enclosed the original of the chart and Form G-103 and Mr. Randy Dade in your Artesia office will receive two copies of the chart and sundry notice for this test. Thank you very much for your assistance in the development of this important energy project. Should you have questions regarding this sundry notice, please do not hesitate to contact me by email at David.Janney@amec.com or by phone at (505) 821-1801.

Respectfully submitted,

David W. Janney, PG
Agent for Lightning Dock Geothermal Power HI-01, LLC

Cc: Randy Dade, NMOCD Artesia
Chuck Smiley – Lightning Dock Geothermal, HI-01, LLC
Michelle Henrie -- Attorney for Lightning Dock Geothermal, HI-01, LLC

Attachments
One (1) Forms G-103 for the CIT of LDG 55-7

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

NO. OF COPIES RECEIVED		
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File		
N. M. B. M.		
U. S. G. S		
Operator		
Land Office		

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: Federal ☑ Fee ☐
5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☐ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☑
7. Unit Agreement Name:
2. Name of Operator: Lightning Dock Geothermal HI-01, LLC
8. Farm or Lease Name: Federal NM34790
3. Address of Operator: 136 South Main Street, Suite 600, Salt Lake City, Utah 84101
9. Well No.: LDG 55-7
4. Location of Well: Unit Letter J 2329 Feet From The South Line and 2412 Feet From The East Line, Section 7 Township 25S Range 19W NMPM.
10. Field and Pool, or Wildcat: Lightning Dock Geothermal Resource
15. Elevation (Show whether DF, RT, GR, etc.): 4201 GR
12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐			COMMENCE DRILLING OPNS.	☐	PLUG & ABANDONMENT	☐
PULL OR ALTER CASING	☐	CHANGE PLANS	☐	CASING TEST AND CEMENT JOB	☑		
OTHER	☐			OTHER	☐		

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 203.

10/11/2013 Move on well and begin rigging up.

10/12/2012 Complete rigging up and RIH to 1000 feet with open ended pipe.

10/13/2013 Run into well with packer and set at 1012 feet. Test all safety valves and gradually pressure up well to slightly above 1000 psi and test for 30 minutes. Pressure at end of test increased slightly to approximately 1050 psi, test is good.

Remove packer, rig up to clean out well.

Please find attached the properly signed and dated circular test chart for the CIT described above.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W. Jenney, PG TITLE Agent, Lightning Dock Geothermal HI-01, LLC DATE September 16, 2013

APPROVED BY Carl J. Chavez TITLE Environmental Engineer DATE 10/29/2013

CONDITIONS OF APPROVAL, IF ANY:

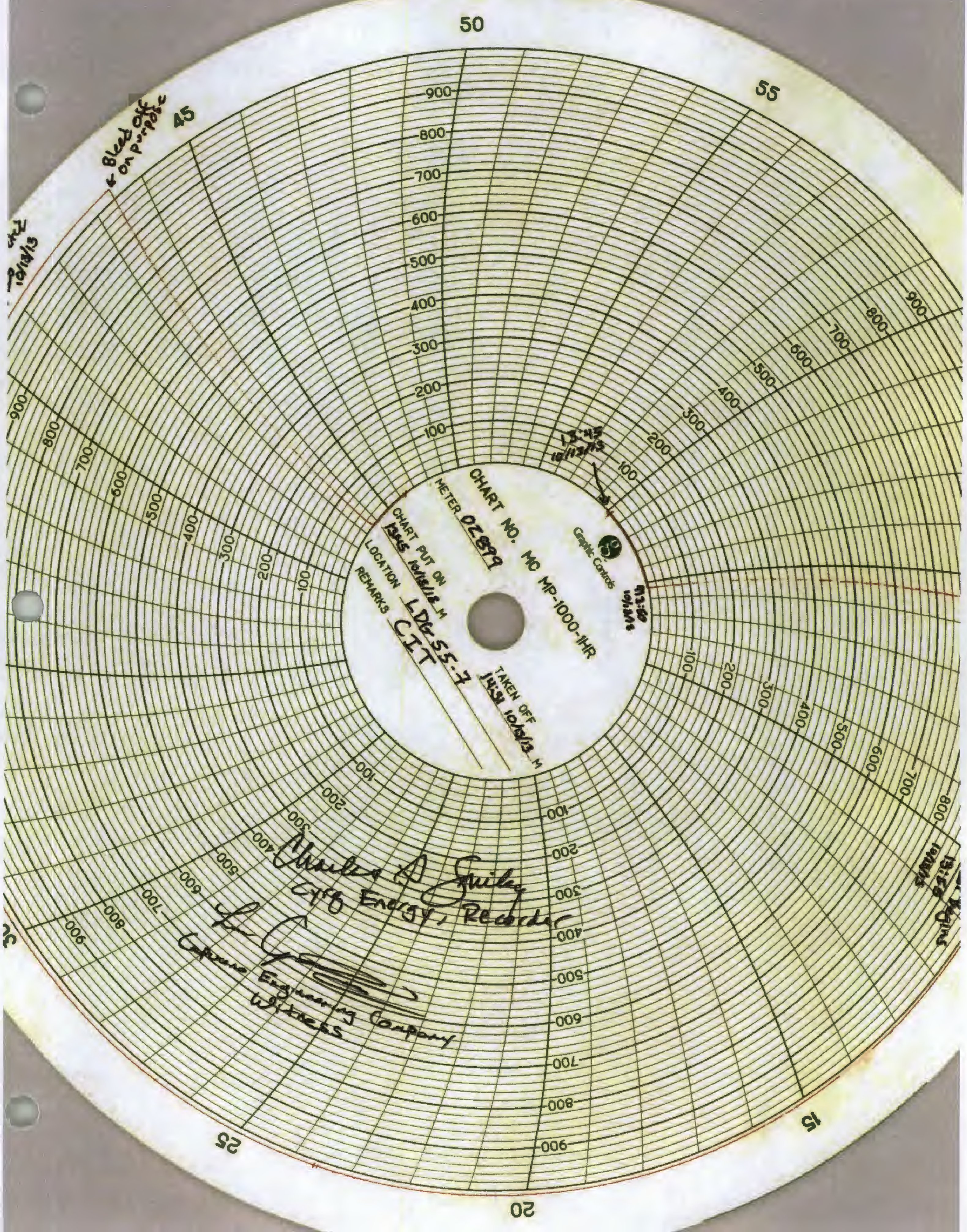

CHART NO. MC MP-1000-1HR
METER 02899
CHART PUT ON 13:45 10/12/13 M
LOCATION LDG 55-7
REMARKS CIT
TAKEN OFF 14:31 10/13/13 M
Graphic Controls
Bleed off on purpose
13:45 10/12/13
Charles A Smiley
CYPG Energy, Recorder
Coleman Engineering Company Witness
50
55
45
15
20
25
100
200
300
400
500
600
700
800
900

Cyrq Energy Benchmark Surveying

All elevations are NAVD88 - feet. Based on OPUS solutions and Automatic Leveling.

Point	Elevation	Notes
MW-1a	4202.83	Cap set in concrete
MW-2	4204.15	Cap set in concrete
MW-3	4210.26	Cap set in concrete
MW-4	4193.54	Cap set in concrete
MW-5	4210.24	Cap set in concrete
MW-6	4197.90	Cap set in concrete
IW-1	4198.13	Cap set in concrete
Point 1	4197.29	SW corner of property
Point 2	4209.73	SE corner of property
Point 3	4191.24	NW corner of property
Point 4	4193.78	near west terminus of Greenhouse Drive
Point 5	4198.75	NE corner of property
Point 6	4191.31	Near well 14-7
45-7	4200.78	Top of flange
55-7	4203.33	Top of valve
63-7	4216.63	Top of valve
53-7	4211.99	Top of valve
47-7	4200.86	Top of valve

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-1, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-1, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within he state, subject to the following conditions:

1. Well A-798-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-1 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District ~~3 Manager~~

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798-MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20039 $5.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

2013 NOV -1

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE

Application for Permit. Form wr-07, Rev 8/25/11

File Number: A-798-MON POD 1	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-1	32° 8' 43"	-108° 50' 08"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A 798-MON 0001 | Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE Application for Permit, Form wr-07

File Number: A-798-MON-POD1	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-1 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-2, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-2, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-2 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-2 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-2 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-2. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $5.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

2013 NOV -1 AM 10:59
OFFICE OF THE STATE ENGINEER

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE — Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD 2	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-2	32° 8' 28"	-108° 50' 16"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 2	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie J. Peterson
Applicant Signature

OFFICE OF THE STATE ENGINEER
2013 NOV -1 AM 10:56

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Signature — Charles L. Jackson, MPA (Print)

Title: District 3 Manager
Print

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798 MOAI-POO2 | Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-2 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-2 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-2 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-2. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-3, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-3, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within he state, subject to the following conditions:

1. Well A-798-MON POD-3 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-3 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-3 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-3. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $50

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

---

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

2013 MAY -1 AM 10:58
OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE	Application for Permit, Form wr-07, Rev 8/25/11
File Number: A-798 MON POD-3	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-3	32° 8' 52"	-108° 49' 59"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

OFFICE OF THE STATE ENGINEER
DEMING, NM
2013 NOV -1 AM 10: 56

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MRH POD 3	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

2013 NOV -1 AM 10:56
OFFICE OF THE STATE ENGINEER

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature / Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MOL POD 3	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-3 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.

2. The casing of well A-798-MON POD-3 shall not exceed 2.25 inches outside diameter.

3. The depth of the well A-798-MON POD-3 shall not exceed 85 feet.

4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.

5. No appropriation of water shall be made from well A-798-MON POD-3. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.

6. The State Engineer retains jurisdiction to administer the conditions of this permit.

7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-4, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-4, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-4 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-4 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-4 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-4. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
\nimas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $50.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE

Application for Permit. Form wr-07, Rev 8/25/11

File Number: A-798 MON POD-4	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-4	32° 8' 45"	-108° 50' 40"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD 4	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: [signature] Charles L. Jackson, MPA
Signature Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 4	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-4 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-4 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-4 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-4. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-5, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-5, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-5 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-5 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-5 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-5. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 320044 $50.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. **APPLICANT(S)**

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: **Mike Gipson or Kacie Peterson** check here if Agent ☐	Contact or Agent: **David Janney** check here if Agent ☒
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

OFFICE OF THE STATE ENGINEER

OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD 5	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-5	**32° 8' 27"**	**-108° 50' 01"**	**Section 7, Township 25 S, Range 19 W**

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ **Yes** ☒ **No** **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ **Yes** ☒ **No**
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rodgers & Co., Inc.**	Driller License Number: **225**

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Each of these monitoring wells will be used to monitoring groundwater quality related to the operation of the geothermal power plant. These wells are a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. They will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. Each well will be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval. Wells will be constructed according to State regulations.

OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD 5	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction Dewatering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

OFFICE OF THE STATE ENGINEER

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson
Signature

Charles L. Jackson, MPA
Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON PODS | Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-5 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-5 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-5 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-5. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-6, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-6, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-6 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-6 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-6 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-6. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By: Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

3-20039 $5.00
3-20039

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:

☐ Pollution Control And / Or Recovery ☐ Geo-Thermal

☐ Exploratory ☐ Construction Site De-Watering ☐ Other (Describe):

☒ Monitoring ☐ Mineral De-Watering

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

OFFICE OF THE STATE ENGINEER DEMING, N.M.
2013 OCT 23 AM 8:47

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD-6	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-6	32° 8' 54"	-108° 50' 06"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

This monitoring well will be used to monitoring groundwater quality related to the operation of the geothermal power plant. This well is a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. It will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. It will be be constructed with 2-inch ID schedule 40 PVC casing and have up to a 25-foot screened interval according to State regulations.

OFFICE OF THE STATE ENGINEER DEMING, NM
2013 OCT 28 AM 8:5

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD 6	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer.

OFFICE OF THE STATE ENGINEER
2013 OCT 2 AM 8:5

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature Print

Title: District 3 Manager
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 6	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-798

APPLICATION: A-798-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-798-MON POD-6 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.

2. The casing of well A-798-MON POD-6 shall not exceed 2.25 inches outside diameter.

3. The depth of the well A-798-MON POD-6 shall not exceed 85 feet.

4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.

5. No appropriation of water shall be made from well A-798-MON POD-6. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.

6. The State Engineer retains jurisdiction to administer the conditions of this permit.

7. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 12th day of November , 2013 .

Scott A. Verhines, P.E, State Engineer

Charles L. Jackson, MPA
District 3 Manager

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 12, 2013

FILE: A-798

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-798-POD-7, which has been approved.

Your attention is called to the Conditions of Approval under permit A-798-MON POD-7, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for Monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-798-MON POD-7 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-798-MON POD-7 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-798-MON POD-7 shall not exceed 85 feet.
4. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
5. No appropriation of water shall be made from well A-798-MON POD-7. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
6. The State Engineer retains jurisdiction to administer the conditions of this permit.
7. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager

By:
Martin McMillan
Animas Basin Manager

cc: State Engineer

MM:pg

File No. A-798 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20039 $5.00

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

2015 OCT 28 AM 8:55
OFFICE OF THE STATE ENGINEER

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 8/25/11

File Number: A-798 MON POD-7	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG MW-1B	32° 8' 39"	-108° 50' 08"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **85.00**	Outside diameter of well casing (inches): **2.25**
Driller Name: **Rogers & Co., Inc.**	Driller License Number: **225**

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

This monitoring well will be used to monitoring groundwater quality related to the operation of the geothermal power plant. This well is a requirement of the Discharge Permit GTHT-001 issued for the project by the New Mexico Oil Conservation Divison. It will be completed in shallow alluvium to an approximate depth of 85 feet in low temperature geothermal water. It will be constructed with 2-inch ID schedule 40 PVC casing, have up to a 25-foot screened interval and will be constructed according to State regulations.

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: A-798-MON POD7	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 12th day of November 20 13, for the State Engineer.

Scott A. Verhines, P.E., State Engineer

By: Charles L. Jackson, MPA
Signature Print

Title: District 3 Manager
Print

OFFICE OF THE STATE ENGINEER
2013 NOV 25 AM 8:5

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: A-798-MON POD 7	Trn Number:

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District 3 Office, Deming, NM

Scott A. Verhines, P.E.,
State Engineer

P.O. Box 844
301 S. Tin Street
Deming, New Mexico 88031
PHONE: (575) 546-2851
FAX: (575) 546-2290

November 25, 2013

FILE: A-799

Lightning Dock Geothermal, HI-01, LLC
c/o Mike Gipson or Kacie Peterson
P.O. Box 86
Animas, N.M. 88020

David Janney
8519 Jefferson NE
Albuquerque, N.M. 87113

Greetings:

Enclosed is your copy of Monitor Well Permit A-799, which has been approved.

Your attention is called to the Conditions of Approval under permit A-799-MON-POD1, which states as follows:

This application is approved provided it is not exercised to the impairment of any others having existing rights prior to this application for permit for a monitor well; further provided that all rules and regulations of the State Engineer pertaining to the drilling of shallow wells be complied with; and is not detrimental to the public welfare or contrary to the conservation of water within the state, subject to the following conditions:

1. Well A-799-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-799-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-799-MON POD-1 shall not exceed 600 feet.
4. PVC casing set using any cement grout is subject to collapse and/or deformation due to column weight and heat of hydration of the curing cement. Casing manufacturer should be consulted to establish the timing and placement of safe intervals of annular sealant.
5. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
6. No appropriation of water shall be made from well A-799-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
7. The State Engineer retains jurisdiction to administer the conditions of this permit.
8. Well record shall be filed on or before November 30, 2014.

Sincerely,

Charles L. Jackson, MPA
District 3 Manager
By:
Martin McMillan
Animas Basin Manager
MM:pg
Cc: State Engineer

File No. A 799 MON

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 3-20044 $100

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

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1. APPLICANT(S)

Name: **Lightning Dock Geothermal HI-01, LLC**	Name:
Contact or Agent: check here if Agent ☐ **Mike Gipson or Kacie Peterson**	Contact or Agent: check here if Agent ☒ **David Janney**
Mailing Address: **PO Box 86**	Mailing Address: **8519 Jefferson NE**
City: **Animas**	City: **Albuquerque**
State: **NM** Zip Code: **88020**	State: **NM** Zip Code: **87113**
Phone: ☐ Home ☐ Cell Phone (Work): **575. 548.0301**	Phone: ☐ Home ☐ Cell Phone (Work): **505.821.1801**
E-mail (optional): **kacie.peterson@cyrqenergy.com**	E-mail (optional): **david.janney@amec.com**

OFFICE OF THE STATE ENGINEER
2012 NOV -1 AM 10:52

FOR OSE INTERNAL USE	Application for Permit, Form wr-07, Rev 8/25/11
File Number: A-799 Mon Pod-1	Trn Number:
Trans Description (optional):	
Sub-Basin: Animas	
PCW/LOG Due Date:	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Latitude:	Y or Northing or Longitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
LDG IW	32° 8' 40" 39.46"	-108° 50' 18" 13.97"	Section 7, Township 25 S, Range 19 W

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Lightning Dock Geothermal HI-01, LLC and Rosette Inc.**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): 85.00	Outside diameter of well casing (inches): 2.25
Driller Name: Rodgers & Co., Inc.	Driller License Number: 225

OFFICE OF THE STATE ENGINEER
2013 NOV -1 AM 8:12

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Mud-rotary drilling will advance an approximate 8-inch borehole to approximately 600 feet. The borehole geology will be logged in the field. The monitoring well will consist of 2-inch diameter Schedule 80 PVC rated for geothermal use. 15 feet of 0.020 continuous slot screen will be installed from approximately 600 feet below existing grade to approximately 585 feet below existing grade. 585 of blank casing will be installed above the screen section. A 10/20 silica sand filter pack will be emplaced via tremie pipe to a minimum of 3 feet above the screen section. A minimum 3-foot think pure bentonite plug will be placed above the filter place via tremie pipe and the annulus of the well bore will be pressure-grouted from the bottom of the

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number:	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☒ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Mike Gipson or Kacie Peterson, Lightning Dock Geothermal HI-01, LLC
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Gipson
Applicant Signature

Kacie Peterson
Applicant Signature

OFFICE OF THE STATE ENGINEER
2013 NOV -1 AM 10:52

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 25th day of November 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Signature — Charles L. Jackson, MPA (Print)

Title: District 3 Manager
Print

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number:	Trn Number:

ATTACHMENT
STATE ENGINEER CONDITIONS OF APPROVAL

FILE: A-799

APPLICATION: A-799-MON

APPLICANTS: Lightning Dock Geothermal, HI-01, LLC

1. Well A-799-MON POD-1 shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-1 New Mexico Statutes Annotated.
2. The casing of well A-799-MON POD-1 shall not exceed 2.25 inches outside diameter.
3. The depth of the well A-799-MON POD-1 shall not exceed 600 feet.
4. PVC casing set using any cement grout is subject to collapse and/or deformation due to column weight and heat of hydration of the curing cement. Casing manufacturer should be consulted to establish the timing and placement of safe intervals of annular sealant.
5. Well record shall be filed with the District 3 Office of the State Engineer within 20 days after completion of the well. Failure to timely file the well record shall result in cancellation of this permit.
6. No appropriation of water shall be made from well A-799-MON POD-1. The well shall be for monitoring purposes only, unless and until a permit for a specific use has been issued by the State Engineer.
7. The State Engineer retains jurisdiction to administer the conditions of this permit.
8. Well record shall be filed on or before November 30, 2014.

Witness my hand and seal this 25th day of November, 2013.

Scott A. Verhines, P.E.,

Charles L. Jackson, MPA
District 3 Manager

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-1A	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4203.94 ft above MSL
Elevation Pad: 4202.83 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/18/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/18/2013
Filter Pack: 57 - 85 feet
Screened Interval: 60 - 85 feet

N (ft): 417894
E (ft): 2412787

▼ Static Water Level (BGS/Elev. MSL): 4136.39 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
5					**Silty Sand**, fine to medium grained, non-plastic,gray brown, dry.	4203	
10				18	**Clayey Sand with Gravel**, predominantly medium grained, trace coarse sand, medium plasticity, moist, brown; gravel predominantly 1/2 inch.	4198	
15						4193	
20				11	**Silty Clay**, low plasticity, moist, gray brown.	4188	
25					**Clayey Sand With Gravel**, predominantly fine- to medium grained, medium plasticity.	4183	
30	- 2 inch schedule 80 CPVC casing; Cement grout			5		4178	Very moist at ~30 feet
35						4173	
40				30	**Clay with Sand with Gravel**, medium plasticity, moist, brown.	4168	
45						4163	
50				66	**Clayey Sand**, predominantly medium grained, medium plasticity, gray brown.	4158	
55	- 3/8 inch coated bentonite pellets				**Sand with Silt with Gravel**,poorly graded, medium grained, moist, brown; gravel up to 3/4 inch, angular.	4153	
60						4148	
65 ▼	- 10/20 Silica sand			37	**Clayey Sand with Gravel**, predominantly fine to medium grained, medium plasticity, moist, gray brown; gravel predominantly ~1/2 inch, subangular, ranging up to 3/4 inch.	4143	
70						4138	
75	- 0.020 Slotted well screen				Bottom 5-10 feet contains sandy layers and flowing sands.	4133	
80	- Slough, flowing sands (estimated from sand usage)					4128	
85					Total Depth = 85 ft	4123	
						4118	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-1B	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4203.00 ft above MSL
Elevation Pad: 4202.00 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/19/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/19/2013
Filter Pack: 57 - 85 feet
Screened Interval: 60 - 85 feet

N (ft): _____ E (ft): _____

▼ Static Water Level (BGS/Elev. MSL): _____

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Silty Clayey Sand**, fine to medium grained, low plasticity, brown, trace gravel.	4202	
5					**Clayey Sand**, predominantly medium grained, medium plasticity, moist, brown.	4197	
10				18		4192	
15						4187	
20				18		4182	
25					**Clayey Sand with Gravel**; gravel subangular, ~1/2 inch	4177	
30	- Cement Grout - 2 inch schedule 80 CPVC casing			6	**Clay**, medium plasticity, very moist, brown.	4172	Very moist zone.
35					**Clayey Sand**, medium grained, medium plasticity, moist, gray brown.	4167	
40				47		4162	
45					**Silty Clayey Sand**, predominantly coarse, low plasticity, moist, gray brown.	4157	
50				77	**Clayey Sand**, predominantly medium grained, medium plasticity, moist, gray brown.	4152	
55	- 3/8 inch coated bentonite pellets					4147	
60					**Clayey Sand with Gravel**; gravel predominantly ~1/2 inch ranging up to 3/4 inch, subangular.	4142	Very moist at~65 feet
65				42	**Clay**, medium plasticity, very moist, gray brown.	4137	
70	- 10/20 silica sand				Trace Gravel below ~72 feet.	4132	
75	- 0.020 Slotted well screen				**Clay with Sand**, medium plasticity, trace gravel, wet to supersaturated. Flowing sands at bottom of hole.	4127	Wet
80						4122	
85	- Slough and flowing sands (estimated from sand usage)				Total Depth = 85 ft	4117	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-2	amec

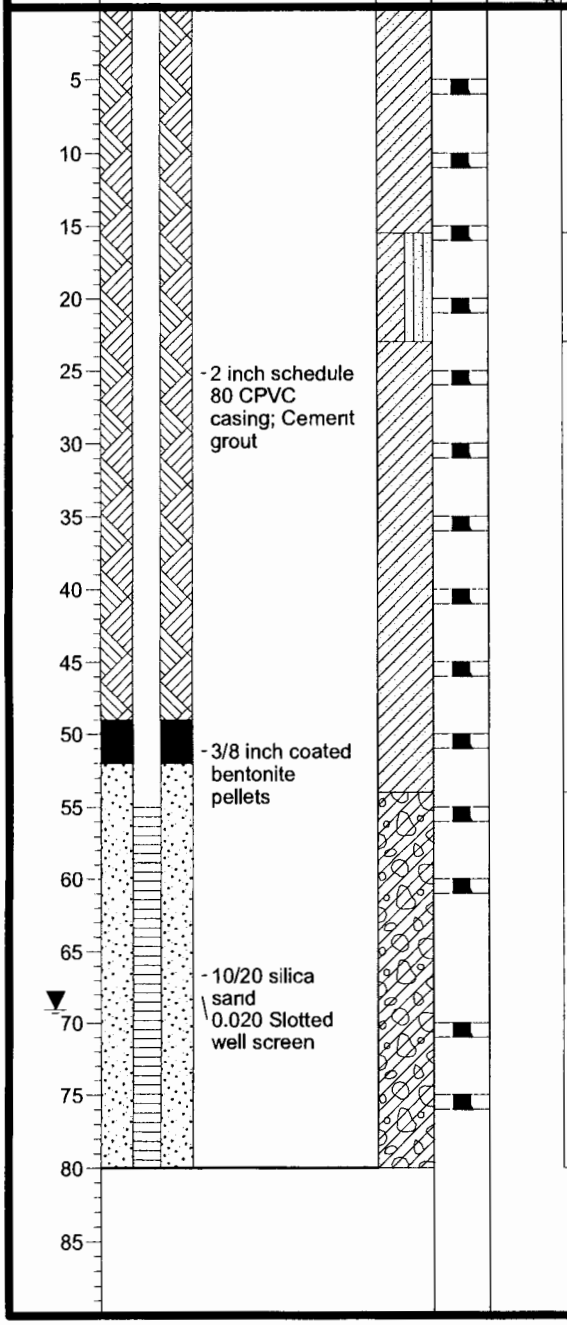
Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4205.00 ft above MSL
Elevation Pad: 4204.15 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/14/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/14/2013
Filter Pack: 52 - 80 feet
Screened Interval: 55 - 80 feet

N (ft): 419017
E (ft): 2412933

▼ Static Water Level (BGS/Elev. MSL): 4135.15 ft above MSL



SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-3	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4211.08 ft above MSL
Elevation Pad: 4210.26 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/15/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/15/2013
Filter Pack: 52 - 80 feet
Screened Interval: 55 - 80 feet

N (ft): 418962
E (ft): 2413681

▼ Static Water Level (BGS/Elev. MSL): 4137.84 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Silty Clayey Sand with Gravel**, predominantly fine to medium grained, trace coarse sand, low plasticity,damp, gray brown; gravel predominantly 1/2 inch, subangular.	4210	
5						4205	
10						4200	
15					**Clayey Sand with Gravel**, predominantly medium- to coarse grained, medium plasticity, damp to moist; gravel 1/2-3/4 inch, subangular.	4195	
20						4190	
25	- 2 inch schedule 80 CPVC casing; Cement grout					4185	
30						4180	
35					Subangular gravel horizon: gravel up to 1 inch at 39 feet BGS.	4175	
40						4170	
45					**Gravel with Clay and Sand**, poorly graded, ranging up to 3/4 inch, angular; finer fraction medium grained sand and clay, medium plasticity, gray brown.	4165	
50	- 3/8 inch coated bentonite pellets					4160	
55					**Clayey Sand**, medium- to coarse grained, medium plasticity, gray brown.	4155	
60					**Gravel with Clay and Sand**, poorly graded, subangular, ranging up to 3/4 inch, subangular.	4150	
65	- 10/20 silica sand - 0.020 Slotted well screen					4145	
70 ▼					**Clayey Sand**, predominantly medium grained, medium plasticity, moist, gray brown. Sandy horizons likely below 75 feet.	4140 ▼	
75						4135	
80					**Sand with Silt**, poorly graded, highly cemented, predominantly medium grained. Auger refusal at 80 feet.	4130	
85						4125	

Total Depth = 80 ft

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-4	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4194.89 ft above MSL
Elevation Pad: 4193.54 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/13/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/13/2013
Filter Pack: 52 - 80 feet
Screened Interval: 55 - 80 feet

N (ft): 419101
E (ft): 2411617

▼ Static Water Level (BGS/Elev. MSL): 4127.21 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Clay with Sand**, medium plasticity, windblown, dry, gray brown.	4194	
5						4189	
10					**Silty Clayey Sand**, medium grained, low PI, trace fine gravel ~3/8 inch.	4184	
15					**Clayey Sand**, fine- to medium grained, medium plasticity, moist, gray brown.	4179	Increasing in moisture at ~20 feet. Perched water at ~37 feet.
20						4174	
25	- 2 inch schedule 80 CPVC casing; Cement grout					4169	
30						4164	
35						4159	
40						4154	
45					Traces of coarse sand and fine, angular gravel, ~3/8 inch.	4149	
50	- 3/8 inch coated bentonite pellets				**Clayey Sand**, medium- to coarse grained, medium plasticity, moist gray brown.	4144	
55						4139	
60					Bottom 5-10 feet likely contains sandy horizons.	4134	
65 ▼	- 10/20 silica sand					4129 ▼	
70	- 0.020 Slotted well screen					4124	
75						4119	
80					Total Depth = 80 ft	4114	
85						4109	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-5	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
Elevation TOC: 4211.24 ft above MSL
Elevation Pad: 4210.24 ft above MSL

Type of Completion: Monitoring Well
Start Date: 11/16/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 11/16/2013
Filter Pack: 60 - 78 feet
Screened Interval: 63 - 78 feet

N (ft): 416451
E (ft): 2413497

▼ Static Water Level (BGS/Elev. MSL): 4135.23 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Silty Sand**, fine- to medium grained, non-plastic, dry, gray brown.	4210	
5						4205	
10					**Clayey Sand**, predominantly fine- to medium grained, medium plasticity, trace coarse sand, trace gravel.	4200	
15					**Clayey Sand**, predominantly medium- to coarse grained.	4195	
20					**Clay with Sand**, medium plasticity, gray brown, trace gravel up to 1 inch, subangular at 20 feet.	4190	
25						4185	
30	- 2 inch schedule 80 CPVC casing; Cement grout				**Clayey Sand with Gravel**, predominantly fine- to medium grained, medium plasticity, gray brown; gravel predominantly ~1/2 inch, ranging up to 3/4 inch, subangular.	4180	
35						4175	
40						4170	
45						4165	
50						4160	
55					**Clay with Sand**, medium plasticity, gray brown.	4155	
60	- 3/8 inch coated bentonite pellets					4150	
65						4145	
70	- 10/20 silica sand 0.020 Slotted well screen				**Clayey Sand**, fine- to medium grained, medium plasticity, gray brown; trace gravel, predominantly ~1/2 inch, ranging up to 1 inch, angular.	4140	
▼ 75						▼ 4135	
80					**Sand with Silt**, hard, well-cemented, possibly silicified. Auger refusal at 78 feet.	4130	
85					Total Depth = 78 ft	4125	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG MW-6	amec

Client: Lightning Dock Geothermal HI-01, LLC
Type of Completion: Monitoring Well
Surface Completion: Stickup
Project Number: 11-517-00102.06
Start Date: 11/17/2013
Completed: 11/17/2013
Field Geologist: E. Koenig
Formation of Completion: Alluvium
Filter Pack: 57 - 85 feet
Drilling Contractor: Rodgers & Co., Inc.
Borehole Diameter: 8 inches
Screened Interval: 60 - 85 feet
Driller: John Tanner
Drilling Method: Hollow Stem Auger 8"
N (ft): 416482
E (ft): 2412309
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4197.90 ft above MSL
Static Water Level (BGS/Elev. MSL): 4132.57 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					**Clay**, windblown, medium plasticity, trace sand, dry, gray brown.	4198	
5						4193	
10					**Clayey Sand**, medium- to coarse grained, medium plasticity, damp to moist, gray brown.	4188	
15					**Clay**, medium plasticity, moist, brown.	4183	
20					**Clayey Sand**, fine- to medium grained, medium plasticity, moist, gray brown.	4178	
25					**Clay with Sand**, medium plasticity, moist, gray brown.	4173	Very moist at ~23 feet.
30	- 2 inch schedule 80 CPVC casing; Cement grout				**Clayey Sand**, predominantly medium grained, medium plasticity, moist, gray brown.	4168	
35						4163	
40						4158	
45						4153	
50						4148	
55	- 3/8 inch coated bentonite pellets					4143	
60					Trace fine gravel below ~60 feet, 1/4-3/8 inch, angular.	4138	Very moist at ~68 feet.
65 ▼					Sandy horizons likely below 75 feet.	4133 ▼	
70	- 10/20 silica sand - 0.020 Slotted well screen					4128	
75						4123	
80						4118	
85					Total Depth = 85 ft	4113	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

N (ft): 417682
E (ft): 2412393

Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
0					Alluvium: **Clayey Sand**, medium plasticity, sand predominantly coarse, mostly volcanics: ~60% Rhyolite ~20% Andesite or basalt ~20% Chert	4198	
5						4193	
10					**Clay with Gravel**, medium plasticity; gravel: mixed volcanics: rhyolite, andesite, and chert, some limonite staining and low grade greenish alteration.	4188	
15						4183	
20					**Clayey Sand**, predominantly medium grained, trace gravel: mixed volcanics, rhyolite and basalt/andesite; sand is subangular: quartz, feldspar, chert and mafics.	4178	
25						4173	
30					**Clay and Clayey Sands**, medium plasticity; trace gravel of mixed volcanics: rhyolite, maybe dacite and andesite, trace yellow jasper.	4168	
35						4163	
40						4158	
45						4153	
50					**Clay**, trace medium sand, medium plasticity, yellow gray brown.	4148	
55						4143	
60					**Clayey Sand**, predominantly fine grained, some medium grained horizons, medium plasticity, trace gravel, ~1/2 inch, subround, mostly dusky red and gray, rhyolitic with visible sanidine crystals.	4138	Gravelly zone at ~75 feet.
65						4133	
70						4128	
75 ▼						4123 ▼	
80					Generally sandier and coarser with intermittent horizons of fine clayey sand.	4118	
85						4113	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

N (ft): 417682
E (ft): 2412393

Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
95					Generally sandier and coarser with intermittent horizons of fine clayey sand.' *Layer continued from previous page'*	4108	
100					**Clay**, medium plasticity, trace sand, gray brown.	4103	
105						4098	
110					**Clayey Sand**, fine- to medium grained, medium plasticity, trace gravel ranging up to 1/2 inch, subround, mostly volcanics.	4093	
115						4088	
120						4083	
125						4078	
130					**Sand with Silt with Gravel**, poorly graded, subangular, medium- to coarse grained; mixed volcanics including tan, dusky red and gray rhyolites, trace yellow jasper, basalt and breccia.	4073	
135						4068	
140					Increasing gravel with depth.	4063	
145						4058	
150					Occasional intervals of clayey sand.	4053	
155					**Gravels with Sand**, poorly graded, approximately 1/2-3/4 inch, mixed volcanics: tan and dusky red rhyolite, volcaniclastics, yellow gray chert.	4048	
160						4043	
165						4038	
170					**Clayey Gravel with Sand**	4033	
175						4028	
						4023	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

N (ft): 417682
E (ft): 2412393

▼ Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
185					**Sand**, poorly graded, medium- to coarse grained, subangular highly cemented and far less heterogeneous than previously -mainly red-brown rhyolite.	4013	
190					**Clay with fine Sand**, medium plasticity.	4008	
195						4003	
200					**Sand with Gravel**, poorly graded, medium- to coarse grained, subangular, primarily red brown rhyolite, very hard and well cemented.	3998	
205						3993	
210						3988	
215						3983	
220						3978	
225						3973	
230					**Clayey Sand with Gravel**, predominantly medium- to coarse grained, medium plasticity, reddish brown.	3968	
235						3963	
240					Fine-to medium grained, gray brown	3958	
245						3953	
250					**Clay**, medium plasticity, greenish gray.	3948	
255						3943	
260						3938	
265						3933	Change from tricone to PDC bit

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

N (ft): 417682
E (ft): 2412393

▼ Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
275	- 2 inch schedule 80 CPVC casing; Cement grout				**Sand with Gravel**, poorly graded, medium- to coarse grained, angular; gravel is flattened and subround to subangular, material mostly volcanically derived: red brown, gray and purplish gray rhyolites with trace greenish alteration.	3928	Change from tricone to PDC bit.
280					Very hard and well-cemented.' *Layer continued from previous page'*	3923	
285					**Sand**, angular, much easier to drill through; change in lithology to mostly quartz with only ~5% volcanics. Some clayey horizons toward bottom of unit.	3918	
290					**Clay**, medium plasticity, bright red brown, possibly weathered or hydrothermally altered rhyolite.	3913	
295					Intermittent horizons of hard sands.	3908	
300					**Clay**, medium plasticity.	3903	
305					Hard sands	3898	
310					Alternating Sandy and clayey layers.	3893	
315					**Gravel**, poorly graded, ranging up to 1 inch, flattened and subround , mostly volcanics: red brown and gray rhyolites with visible sanidine crystals, trace quartz grains and slight trace grains with either greenish alteration or olivine content.	3888	
320					Occasional clay or clayey sand horizons below 335 feet.	3883	Trip out and change back to tricone bit at 320 feet BGS per Troy Richardson's instructions. Material on PDC bit was brown clay and purplish gray pumice.
325					Grading sandier with depth.	3878	
330						3873	
335						3868	
340						3863	
345						3858	
350						3853	
355						3848	
						3843	

SAMPLE TYPE LEGEND

- Auger Cuttings Sample
- Composite Mud Rotary Cuttings Sample
- Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

N (ft): 417682
E (ft): 2412393

▼ Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
455					**Sand**, poorly graded, medium- to coarse grained, mostly quartz and volcanics: brown and red brown rhyolite, trace more mafic material, slight trace limonite coated grains, greenish alteration in a few grains.	3748	
460						3743	
465					**Clay with Gravel**, high plasticity, gray.	3738	
470					**Sand with very fine gravel**, poorly graded, medium- to coarse grained, angular: quartz and volcanics with slight trace clay shale fragments.	3733	
475						3728	
480						3723	
485						3718	
490						3713	
495						3708	
500					Gravel, size unknown, mixed volcanics with slight trace blue gray clay shale fragments.	3703	
505						3698	
510					**Sand**, poorly graded, medium- to coarse grained, subangular, quartz and mixed volcanics, slight trace clay shale fragments.	3693	
515						3688	
520						3683	
525						3678	
530						3673	
535						3668	
						3663	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Project Name: Groundwater Quality Monitoring	BOREHOLE LOG INW-1	amec

Client: Lightning Dock Geothermal HI-01, LLC
Project Number: 11-517-00102.06
Field Geologist: E. Koenig
Drilling Contractor: Rodgers & Co., Inc.
Driller: Art Baeza
Drilling Method: Mud Rotary
Elevation TOC: 4199.58 ft above MSL
Elevation Pad: 4198.13 ft above MSL

Type of Completion: Monitoring Well
Start Date: 12/3/2013
Formation of Completion: Alluvium
Borehole Diameter: 8 inches

N (ft): 417682
E (ft): 2412393

Static Water Level (BGS/Elev. MSL): 4121.22 ft above MSL

Surface Completion: Stickup
Completed: 12/3/2013
Filter Pack: 565 - 600 feet
Screened Interval: 570 - 590 feet

Depth (ft)	Well Diagram	Graphic Log	Sample Interval	Blows/ft. 140 lb. 30" free-fall drop hammer	Material Description	Elev. (ft)	Remarks
545					**Sand**, poorly graded, medium- to coarse grained, subangular, quartz and mixed volcanics, slight trace clay shale fragments.' *Layer continued from previous page'*	3653	
550					Grading to coarse grained.	3648	
555						3643	
560						3638	
565	- 3/8 inch coated bentonite pellets					3633	
570						3628	
575						3623	
580	- 0.020 Slotted well screen				Some gravel, round to subround, ~1/2 inch, rhyolite.	3618	
585	10/20 Silica sand					3613	
590						3608	
595	- Blank Casing (Sump)					3603	
600					Total Depth = 600 ft	3598	
605						3593	
610						3588	
615						3583	
620						3578	
625						3573	

SAMPLE TYPE LEGEND

Auger Cuttings Sample

Composite Mud Rotary Cuttings Sample

Split Spoon Sample

Summary of Production Injection Well Analytical Results
Lightning Dock Geothermal HI-01, LLC - Hidalgo County, New Mexico
TABLE 1

			Well ID	LDG 45-7	LDG 45-7	LDG 45-7	LDG 45-7	LDG 45-7	LDG 53-7	LDG 53-7	LDG 55-7	LDG 55-7	LDG 55-7	LDG 55-7	LDG 55-7	LDG 63-7	LDG 63-7
			Fluid Type	Single Phase	Single Phase Fluid	Flashed Fluid	Single Phase Fluid	Total Fluid	Single Phase Fluid	Single Phase Fluid	Single Phase Fluid	Flashed Fluid	Total Fluid	Flashed Fluid	Total Fluid	Single Phase Fluid	Single Phase Fluid
			Sample ID	1312A59-001	16082-1	16082-2	LDG 45-7	16082-2	1312666	16082-3	1312055-001	14949-1	14949-1	14949-2	14949-2	1312A59-002	WW63-7
		NMAC 20.6.2 Standard	Sample Date	12/19/2013	1/26/12	1/26/12	12/8/11	1/26/12	12/13/13	1/26/12	11/27/13	8/5/10	8/5/10	8/5/10	8/5/10	12/20/13	8/28/12
	Analyte	Dissolved															
A		Concentration															
1	Arsenic (As)	0.1 mg/l		0.012	0.018	0.015	0.0098	0.014	ND	0.016	0.0074	0.02	0.019	0.018	0.017	3.2	0.056*
2	Barium (Ba)	1.0 mg/l		0.065	0.076	0.061	0.054	0.05861	0.038	0.042	0.094	0.071	0.071	0.068	0.05	0.051	0.014*
3	Cadmium (Cd)	0.01 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
4	Chromium (Cr)	0.05 mg/l		NA	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA
5	Cyanide (CN)	0.2 mg/l		ND	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA
6	Fluoride (F)	1.6 mg/l		14	11.1	11.6	10	11	1.4	11.6	9.5	10.8	10.3	9.37	8.93	17	14.2
7	Lead (Pb)	0.05 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	0.0011	NA
8	Total Mercury (Hg)	0.002 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
9	Nitrate (NO_3 as N)	10.0 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	<0.500
10	Selenium (Se)	0.05 mg/l		0.0017	NA	NA	0.0034	NA	NA	NA	0.0038	NA	NA	NA	NA	0.0021	NA
11	Silver (Ag)	0.05 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
12	Uranium (U)	0.03 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
13	Radioactivity: Radium (Ra 226)	30 pCi/L		6.49 ± 1.35 (0.367)	NA	NA	NA	NA	0.166 ± 0.380 (0.225)	NA	NA	NA	NA	NA	NA	-0.220 ± 0.306 (0.775)	NA
14	Radioactivity: Radium (Ra 228)	30 pCi/L		0.522 ± 0.331 (0.614)	NA	NA	NA	NA	0.414 ± 0.460 (0.931)	NA	NA	NA	NA	NA	NA	0.0100 ± 0.365 (0.847)	NA
15	Radionuclides: Radon 222	None		2560	NA	NA	NA	NA	-67.8 U	NA	NA	NA	NA	NA	NA	78.6 U	NA
16	Benzene	1.0 ug/l		ND	NA	NA	NA	NA	ND	NA	1.8	NA	NA	NA	NA	4.8	NA
17	Polychlorinated biphenyls (PCB's)	1 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
18	Toluene	750 ug/l		ND	NA	NA	NA	NA	ND	NA	3.4	NA	NA	NA	NA	2	NA
19	Carbon Tetrachloride	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
20	1,2-dichloroethane (EDC)	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
21	1,1-dichloroethene (1,1-DCE)	5 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
22	1,1,2,2-tetrachloroethylene (PCE)	20 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	370	NA
23	1,1,2-trichloroethylene (TCE)	100 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	1	NA
24	ethylbenzene	750 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
25	total xylenes	620 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
26	methylene chloride	100 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
27	chloroform	100 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
28	1,1-dichloroethane	25 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
29	ethlene dibromide (EDB)	0.1 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
30	1,1,1-trichloroethane	60 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
31	1,1,2-trichloroethane	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
32	1,1,2,2-tetrachloroethane	10 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
33	vinyl chloride	1 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
34	PAH's: total naphthalene + monomethylnaphthalenes	30 ug/l		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
35	benzo-a-pyrene	0.7 ug/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
36	TPH 418.1	None		52	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	2.8	NA
B																	
1	Chloride (Cl)	250.0 mg/l		97	86.9	90.1	86	85.8	33	79	140	90.2	86	89.8	85.6	67	78.1
2	Copper (Cu)	1.0 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	0.029	0.006*
3	Iron (Fe)	1.0 mg/l		ND	0.026	0.021	ND	<0.005	ND	0.04	0.4	ND	ND	ND	ND	0.29	3.91*
4	Manganese (Mn)	0.2 mg/l		0.018	0.027	0.0082	ND	0.0078	0.067	0.002	0.13	0.016	0.015	0.0069	0.0066	0.028	0.183*
5	Phenols	0.005 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	18	NA
6	Sulfate (SO_4)	600.0 mg/l		540	507	526	510	501	120	453	630	531	506	526	501	250	303
7	Total Dissolved Solids (TDS)	1000.0 mg/l		1270	1370	1390	1200	1324	321	1200	842	1370	1306	1360	1296	800	1020
8	Zinc (Zn)	10.0 mg/l		ND	NA	NA	ND	NA	0.049	NA	ND	NA	NA	NA	NA	0.027	NA
9	pH	between 6-9		6.82	6.64	8.37	6.7	NA	7.53	9.51	6.89	6.97	NA	6.6	NA	8.41	9.45
C																	
1	Aluminum (Al)	5.0 mg/l		0.21	0.177	0.175	ND	0.167	ND	0.209	0.08	NA	NA	NA	NA	0.04	NA
2	Boron (B)	0.75 mg/l		0.46	0.441	0.432	0.46	0.411	0.12	0.482	0.65	0.469	0.447	0.467	NA	2	2.09*
3	Cobalt (Co)	0.05 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA
4	Molybdenum (Mo)	1.0 mg/l		0.026	NA	NA	0.03	NA	ND	NA	0.046	NA	NA	NA	NA	0.094	NA
5	Nickel (Ni)	0.2 mg/l		ND	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	0.049	NA
6	Bromide	None		ND	NA	NA	NA	NA	NA	NA	0.46	NA	NA	NA	NA	ND	NA
7	Lithium (Li)	None		0.9	NA	NA	NA	NA	0.0887	NA	0.8	NA	NA	NA	NA	0.6	NA
8	Rubidium (Rb)	None		0.25	NA	NA	NA	NA	0.0127	NA	0.3	NA	NA	NA	NA	0.07	NA
9	Tungsten	None		ND	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA

NOTES

NA = Not Analyzed

NA = Not Detected

* Total metal not dissolved metal

U = Not detected at minimum detectable concentration

H = Anaylsis performed past recommended holding time

Summary of Monitoring Well Analytical Results
Lightning Dock Geothermal HI-01, LLC - Hidalgo County, New Mexico
TABLE 2

			Well ID:	MW-1	MW-1B	MW-2	MW-2 Duplicate	MW-3	MW-4	MW-5	MW-6	INW1	LDG 47-7
		NMAC 20.6.2	Sample Date:	11/25/2013	12/11/2013	11/25/2013	11/25/2013	11/24/2013	11/24/2013	11/24/2013	11/23/2013	12/20/2013	12/21/2013
	Analyte	Std. Dissolved Concentration	Lab ID:	1311B14-001	1312659-001	1311B14-002	1311B14-003	1311B14-004	1311B14-005	1311B14-006	1311B14-007	1312A59-003	1312840-001
1	Arsenic (As)	1 mg/l		0.0055	0.011	0.0082	0.0083	0.019	0.012	0.0060	0.020	0.013	0.42
2	Barium (Ba)	1 mg/l		0.063	0.14	0.044	0.043	0.06	0.059	0.041	0.047	0.099	0.13
3	Cadmium (Cd)	0.01 mg/l		ND	ND	ND	ND	ND	ND	ND	MD	ND	ND
4	Chromium (Cr)	0.5 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
5	Cyanide (CN)	0.2 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6	Fluoride (F)	1.6 mg/l		7.7	9.3	11	11	12	4.3	1.3	6.9	3.9	12
7	Lead (Pb)	0.05 mg/l		ND	0.0044	ND	ND	ND	ND	ND	ND	ND	ND
8	Total Mercury (Hg)	0.002 mg/l		0.00079	0.0016	ND	ND	0.00034	ND	0.0010	0.00077	ND	ND
9	Nitrate(NO3 as N)	10 mg/l		2.6	15	3.1	3.2	2.1	12	42	42	2.9	ND
10	Selenium (Se)	0.05 mg/l		0.0052	NA	0.0035	0.0035	0.0034	0.033	0.028	0.011	0.01	ND
11	Silver (Ag)	0.05 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12	Uranium (U)	0.03 mg/l		0.011	0.0037	ND	ND	ND	0.0051	0.014	0.0012	0.0013	ND
13	Radioactivity: Radium 266	30 pCi/l		0.285 ± 0.350 (0.571)	2.00 ± 0.722 (0.566)	0.266 ± 0.377 (0.638)	0.183 ± 0.312 (0.550)	0.102 ± 0.375 (0.720)	1.32 ± 0.615 (0.664)	0.305 ± 0.401 (0.667)	0.140 ± 0.305 (0.562)	1.04 ± 0.535 (0.561)	0.0340 ± 0.481 (0.981)
14	Radioactivity: Radium 288	30 pCi/l		0.888 ± 0.456 (0.799)	0.711 ± 0.402 (0.727)	0.0585 ± 0.308 (0.702)	0.468 ± 0.385 (0.767)	0.156 ± 0.270 (0.590)	0.542 ± 0.396 (0.772)	0.333 ± 0.452 (0.966)	2.53 ± 0.949 (1.39)	0.462 ± 0.343 (0.666)	-0.0191 ± 0.378 (0.924)
15	Radionuclides: Radon 222	None		238	676	580	567	781	1090	197	507	1090	-33.4 UH
16	Benzene	1 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	23
17	Polychlorinated biphenyls (PCB's)	1 ug/l		NA	ND	NA	NA	NA	NA	NA	NA	ND	ND
18	Toluene	750 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	45
19	Carbon Tetrachloride	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20	1,2-dichloroethane (EDC)	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21	1,1-dichloroethylene (1,1-DCE)	5 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22	1,1,2,2,-tetrachloroethene (PCE)	20 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23	1,1,2-trichloroethylene (TCE)	100 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24	ethylbenzene	750 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3
25	Total xylenes	620 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	19
26	methylene chloride	100 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	chloroform	100 ug/l		28	33	4.9	5.2	21	ND	ND	ND	ND	ND
28	1,1-dichloroethane	25 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	ethlene dibromide (EDB)	0.1 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	1,1,1-trichloroethane	660 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31	1,1,2-trichloroethane	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32	1,1,2,2-tetrachloroethane	10 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33	vinyl chloride	1 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34	PAH's; total naphthalene + naphthalenes	30 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND ?
35	benzo-a-pyrene	0.7 ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
36	TPH 418.1	None		ND	1.3	ND	ND	1.1	NA	NA	ND	1.4	ND
1	Chloride (Cl)	250 mg/l		100	120	96	96	94	710	230	130	170	130
2	Copper (Cu)	1 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	Iron (Fe)	1 mg/l		ND	8.5	ND	ND	0.24	ND	0.021	0.39	0.033	0.32
4	Manganese (Mn)	0.2 mg/l		0.21	0.27	0.041	0.036	0.18	0.15	0.27	0.074	0.019	0.14
5	Phenol	0.005 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	14
6	Sulfate	600 mg/l		670	540	510	510	540	1200	930	950	700	250
7	Total Dissolved Solids (TDS)	1000 mg/l		1780	1520	1380	1210	1380	3210	2010	1880	1480	1190
8	Zinc (Zn)	10 mg/l		ND	0.015	0.015	ND	ND	0.048	0.023	0.033	ND	0.022
9	pH	6-9 pH Units		7.69	7.66	7.6	7.58	8	7.38	7.62	7.56	8.59	7.33
1	Aluminum (Al)	5 mg/l		0.034	25	0.049	0.024	0.31	ND	ND	0.63	0.069	0.05
2	Boron (B)	.75 mg/l		0.7	0.45	0.37	0.36	0.44	0.22	0.31	0.39	0.52	2.6
3	Cobalt (Co)	0.05 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4	Molybdenum (Mo)	1.0 mg/l		0.058	0.029	0.027	0.026	0.065	0.014	0.031	0.035	0.055	0.038
5	Nickel (Ni)	0.2 mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.081
6	Bromide	None		ND	NA	ND	ND	ND	2.2	1.2	ND	0.8	0.32
7	Lithium (Li)	None		0.8	0.533	0.7	0.7	0.5	1.7	0.4	0.8	0.6	1
8	Rubidium (Rb)	None		0.2	0.189	0.1	0.1	0.2	0.4	0.1	0.1	0.21	0.24
9	Tungsten	None		ND	0.0386	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
NA = not analyzed
ND = not detected
* total metal not dissolved metal