Prepared for:

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MESA-BIERE 1-22 GROUNDWATER INVESTIGATION NORTHEASTERN MONTANA

SEMIANNUAL MONITORING REPORT

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TABLE OF CONTENTS

1. INTRODUCTION 1-1

2. SITE DESCRIPTION AND BACKGROUND 2-1
   - 2.1 Site Location 2-1
   - 2.2 Site History 2-1
   - 2.3 Geology and Hydrogeology 2-3

3. FIELD INVESTIGATIONS 3-1
   - 3.1 Groundwater Level Measurements 3-1
   - 3.2 Groundwater Sampling 3-2

4. ANALYSIS AND OBSERVATIONS 4-1
   - 4.1 Monitoring Well Network 4-1
     - 4.1.1 Source Area Wells 4-1
     - 4.1.2 Western Boundary 4-1
     - 4.1.3 Southern Boundary 4-2
     - 4.1.4 BTEX Results 4-2
   - 4.2 Domestic Water Supply Wells 4-3
   - 4.3 Brine Recovery Well Network 4-4

5. SUMMARY AND CONCLUSIONS 5-5

6. REFERENCES 6-1

LIST OF FIGURES

Figure 1: Well Location and Groundwater Elevation Map

LIST OF TABLES

Table 1: Water and Product Levels

Table 2: Inorganic Water Chemistry Data

Table 3: Monitoring Well Network BTEX and TPH Analytical Data

Table 4: Brine Recovery Well Network Chloride and BTEX Analytical Data

LIST OF APPENDICES

Appendix A: Boundary Monitoring Well CTD-Diver Network Data

Appendix B: Laboratory Analytical Reports

1. INTRODUCTION

The Mesa-Biere 1-22 groundwater monitoring network is located near the southern portion of the East Poplar Oil Field in the Williston Basin and northeast of the City of Poplar, Montana, within the Fort Peck Indian Reservation (the Site). The Mesa-Biere production well was successfully plugged in 2000. Since that time, Pioneer Natural Resources (Pioneer) has conducted numerous hydrogeologic studies of the Mesa-Biere 1-22 well site and surrounding area in accordance with the U.S. Environmental Protection Agency (EPA) Emergency Administrative Order upon Consent (EAOC) #SWDA 08-2001-0027. Site investigations to date have included the drilling and installation of monitoring wells, multiple aquifer tests to define site aquifer properties, extensive borehole and surface geophysical investigations, and the design and installation of a groundwater remediation system comprised of 12 brine recovery wells, 2 tank batteries, and a Class V injection well.

The Mesa-Biere groundwater program includes sampling of area monitoring wells, domestic wells, and brine recovery wells for total dissolved solids (TDS), chloride, and in some cases benzene, toluene, ethylbenzene, and total xylenes (BTEX). Twelve years of groundwater sampling and data collection across the site has documented reduced contaminate concentrations and resulted in reduced monitoring requirements.

This report summarizes groundwater sampling results from the most recent monitoring event conducted September 23 through September 29, 2013. Geosyntec is submitting this report on behalf of Pioneer in response to, and in accordance with, the U.S. EPA EAOC and the September 2011 U.S. EPA modified sampling and analysis plan for the Mesa-Biere 1-22 Groundwater Investigation project.

Site activities during September 2013 included monitoring of 36 monitoring wells, 3 domestic wells, and 12 brine recovery wells. Groundwater monitoring included measurement of static water levels, data collection from insitu data loggers, measurement of onsite field parameters (conductivity, temperature, pH, and dissolved oxygen), and collection of groundwater samples for laboratory analysis of TDS, chloride, and BTEX. Groundwater sampling was conducted in accordance with the project groundwater sampling and analysis plan and U.S. EPA-approved protocols and methods.

2. SITE DESCRIPTION AND BACKGROUND

2.1 Site Location

The Mesa-Biere 1-22 Groundwater project site is located in the southern portion of the East Poplar Oil Field in Roosevelt County, northeast of the City of Poplar, Montana. The site monitoring network extends from the Mesa-Biere 1-22 production well source area in the SW quarter of Sec.22, T28N, R51E, to include wells in Sections 15, 16, 21, 27, 28, and 29 (Figure 1). The study area spans both ancestral and modern terraces that trend west toward the Poplar River Valley, located approximately 2 miles west of the production well location.

Area topography generally consists of a broad glacial bench with low relief, dissected by the Poplar River and its tributaries. Current land surfaces are the result of the effects of Pleistocene glaciation in conjunction with the erosional features of large rivers to the west and south of the project area, the Poplar River and the Missouri River respectively.

Predominate land use in the area surrounding the Mesa-Biere site is dryland farming (Figure 1). Area soils are predominately Dooley sandy to clay loam calcium carbonate soil, exhibiting slow runoff with moderately slow or slow permeability (Montana SSURGO soils database, NRCS[2012]). Soils are fine textured and nonhydric with low organic composition. Water holding capacity for the soils is somewhat limited and depth to water in this soil type is typically greater than 6 feet.

2.2 Site History

Drilled and completed by Mesa Petroleum (Mesa) on June 8, 1970, the Mesa-Biere 1-22 production well was operated for a total of 10 years, from 1970-1972 and from 1976-1984. In 1986 the well was plugged and abandoned by Mesa due to a casing leak. In June of 1985, within 9 months of plugging the production well, fluid flowed to the surface at the Mesa-Biere 1-22. In response, Mesa drilled a relief well to the north-northeast of the production well location and injected additional cement into the formation, which appeared to successfully stop the flow of water. In 1997 Mesa merged with Parker & Parsley Petroleum, forming Pioneer.

In 1999, a number of the area residents and the U.S. EPA filed suit against four of the companies with holdings in the East Poplar Unit: Murphy Oil and Gas, Samson Hydrocarbon, Marathon Oil, and Pioneer. The respondents joined in an EAOC with U.S. EPA (#SDWA 8-99-68, which was later replaced with the current #SWDA 08-2004-0035) with the conditions that the companies conduct a public water supply threat

study and construct a public water system to provide the affected landowners with municipal water from the City of Poplar.

As per the original EAOC, in May 2000 Pioneer installed 8 monitoring wells in the immediate vicinity of the Mesa-Biere 1-22 well site for further investigation. Analytical and field results from the initial round of sampling, which included 2 existing monitoring wells and 4 domestic wells, indicated that the Mesa-Biere 1-22 well was an ongoing source of groundwater contamination. It was determined that oil-field produced water along with some associated crude oil was channeling upward into the shallow drinking water aquifer (Jacobs et al., 2008). In a separate U.S. EPA EAOC (#SWDA 08-2001-0027), Pioneer was required to plug the Mesa-Biere 1-22 well and conduct further sampling.

In July of 2001 with the approval of the U.S. EPA, Pioneer drilled 3 injection wells to the Judith River Formation and re-entered the old relief well. The 4 wells were then used to pump Halliburton's Injectrol product to seal off the brine leak from the Mesa-Biere 1-22 well. In the 11 years since the successful re-entry and plugging of the production well, Pioneer has worked diligently to accurately characterize, delineate, and monitor the resultant contaminant plume. Pioneer voluntarily designed, constructed, and presently operates and maintains a site groundwater remediation system, which exceeds the requirements of the EAOC.

The Mesa-Biere 1-22 groundwater remediation system became operational in August of 2008. The system is composed of 12 brine extraction wells, 6 product recovery wells in the plume proper, 2 tank batteries, and a 7,800-foot Class V, U.S.EPA-permitted injection well (PNR SWD-1). The injection well is permitted for disposal of 10,000 barrels per day (bbl/d) of contaminated groundwater into the Mississippian, Mission Canyon, and Devonian Nisku Formations, far below and hydrologically separate from the affected shallow aquifers comprising the study area.

To date the remediation system has removed over 296,055,144 gallons (7,048,932 bbls) of brine-contaminated water, an estimated 52 percent of the total plume volume at a current rate of approximately 214,914 gallons (5,117 bbls) per day from the aquifer. Pioneer continues to monitor system performance through an extensive monitoring network and geophysical surveys to maximize the remediation system effectiveness.

2.3 Geology and Hydrogeology

The Site is located near the western boundary of the Williston Basin, in close proximity to the center of the Poplar Anticline, which is a result of the Laramide Orogeny during the late Cretaceous and early Paleocene (Hamke, 1966). The Poplar Anticline is estimated to be 10 miles north of the City of Poplar, trending northwest and is approximately 30 miles long and 25 miles wide (Hamke, 1966).

Area surface geology is composed of thick Pleistocene glacial deposits atop the benches. Glacial deposits have been dissected and are replaced and overlain in the alluvial valleys by more recent Holocene alluvium, comprised of fine- to coarse-grained floodplain deposits of the Missouri River and its major tributaries, including the Poplar River, west of the project location (Colton, 1963). These Holocene alluvial deposits are predominately silty in nature with local gravel lenses. This unit can also include colluvial and lacustrine deposits as well as remnants of glacial outwash.

Holocene and Pleistocene sediments overly the Upper Cretaceous Bearpaw Shale, a relatively thick and generally impervious formation ranging from 700 to 1,000 feet in thickness (Thamke and Craigg, 1997). The Bearpaw Shale is comprised primarily of marine shale and claystone with thin beds of bentonite clays, and dips generally to the west.

The water-bearing Quaternary sand and gravel deposits (the Wiota Gravel, alluvium, and alluvium/fan colluvium) are the primary developed source of groundwater for area residents. Water within these deposits generally occurs under unconfined conditions, although due to the heterogeneous nature of the sediments, confined and semiconfined conditions occur as well. Low permeability of the underlying Bearpaw Shale prohibits any significant vertical flow or transport. Regionally the depth to water can range from 7 to 130 feet in the glacial deposits, and from 5 to 44 feet in the alluvium (Thamke et al., 1996).

The Mesa-Biere 1-22 well site is located on the Biere upper terrace, an ancestral bench of the Poplar River and is underlain by Quaternary deposits of varying thickness. Wells located on the Biere upper terrace exhibit an average depth to the upper Wiota Gravel aquifer of approximately 41 feet below ground surface (bgs) and a depth to the Bearpaw Shale of 62 feet bgs. The Wiota aquifer is no longer used as a domestic water supply source in the vicinity of the Mesa-Biere 1-22 well.

Regional groundwater flow is primarily toward the Poplar River Valley to the west of the project area, and then south along the Poplar River alluvium toward the Missouri River Valley. Local variations in the regional groundwater flow path have been

identified within the study area on the Biere upper terrace. Groundwater flow and transport are limited by the thinning and absence of the Wiota Gravel and areas of low hydraulic conductivity along the western portion of the study area (HKM, 2007; DBS&A, 2007; SSP&A, 2008).

3. FIELD INVESTIGATIONS

The September 2013 semiannual monitoring event was conducted from September 23 through September 29, 2013, and consisted of the following tasks:

- Measurement of static water levels for 44 monitoring wells, 4 domestic wells, and pumping levels of 12 brine recovery wells within the PNR monitoring network;
- Data collection from 7 temperature, pressure, and conductivity data loggers deployed within plume boundary monitoring wells;
- Monitoring of groundwater field parameters, including conductivity, temperature, pH, and dissolved oxygen; and
- Collection of groundwater samples from 36 monitoring wells (including replacement well M-31-13), 3 domestic wells, and 12 brine recovery wells for analysis of TDS, chloride, and BTEX.

All operating procedures for sampling were conducted in accordance with the Mesa-Biere 1-22 groundwater investigation sampling and analysis plan and U.S. EPA-approved protocols and methods.

3.1 Groundwater Level Measurements

Water level measurements were measured using an electronic interface probe capable of detecting water and light nonaqueous-phase liquid (LNAPL) with a precision of 0.01 foot. Project personnel recorded static water levels prior to purging and sampling of each well (Table 1). Measureable product was detected in three of the monitoring wells (PNR-17, PNR-25, and PNR-26) and is summarized in Table 1.

Monitoring well and domestic well water levels measured during the sampling event ranged from 1855.11 feet above mean sea level (feet msl) at MOC-20B in the lower ancestral Poplar River terrace, to 2106.50 feet msl at PNR-6, on the older terrace to the east of the Mesa-Biere 1-22. The static water levels on the Biere upper terrace ranged from 1954.26 to 2060.74 feet msl, had a average depth of 44.80 feet bgs, and an observed elevation average of 2032.37 feet msl, a value of approximately 1 foot lower than May 2013 values. September 2013 static water levels indicate a localized site flow direction to the southwest with an average hydraulic gradient of approximately 0.001 (Figure 1). Ongoing remediation efforts have modified both the site gradient and flow directions as evident on the Groundwater Elevation Map (Figure 1) and indicates the remediation system radius of influence during the September sampling event.

3.2 Groundwater Sampling

Groundwater samples were collected from 36 monitoring wells, 3 domestic wells, and 12 recovery wells. Field parameters were measured in a flow through cell for all monitoring and domestic wells, and a clean sample container for the recovery wells. Once field parameters had stabilized, samples were collected, preserved, and stored as directed by the analytical laboratory. Groundwater sampling and decontamination procedures were conducted in accordance with the project sampling and analysis plan and U.S. EPA-approved protocols and methods. Quality control samples comprised approximately 10 percent of the total set submitted for laboratory analysis. Percent differences of field duplicate groundwater sample constituents did not exceed 10 percent for any sample except PNR-10 and PNR-10 Dup. These samples exhibited a 16.57 percent difference in concentrations for chloride and a difference of 0.92 percent for TDS. The laboratory results indicate that the chloride concentrations were affected by matrix interference, have been flagged in the data table, and should be considered estimated.

Prior to sample collection, monitoring and domestic wells were purged by use of a decontaminated portable submersible pump. The brine recovery wells operate with dedicated pumps on a continuous basis, requiring minimal additional purging prior to sample collection.

During the May 2013 sampling event and with U.S. EPA approval, 7 Schlumberger CTD-Diver dataloggers were deployed within plume boundary monitoring wells (PNR-12, 16, 18, 29, 33-06, 36-07, and USGS92-12). These wells are non-impacted and all have low chloride and total dissolved solids concentrations relative to impacted wells. The CTD-Diver data loggers are used to monitor water quality at these wells, providing daily records of temperature, pressure (water levels) and specific conductance (salt content in the water). The data loggers was downloaded during the September 2013 sampling event, during this time there were no significant increases in the specific conductance at any of the 7 wells when compared to the field measurements over the last 5 years with the exception of the upgradient northern boundary well USGS92-12 (Appendix A). The percent difference in USGS92-12 diver average (3.450 mS/cm) as compared to the field average over the last five years (2.541 mS/cm) is an increase of 35 percent in the specific conductivity of the northern boundary monitoring well, however this is only a 2.86 percent difference from the last measured specific conductivity of this well (3.354 mS/cm).

4. ANALYSIS AND OBSERVATIONS

Groundwater samples were analyzed by Energy Laboratory for TDS and chloride, the two primary established indicator parameters for the brine contamination, as well as for BTEX according to the modified U.S. EPA sampling agreement. Analytical results are summarized in Tables 2 through 4. Complete analytical reports are provided in Appendix B.

4.1 Monitoring Well Network

The Mesa-Biere 1-22 groundwater monitoring well network is comprised of 36 wells. Monitoring wells are sampled on either a semiannual or annual schedule based on legacy water chemistry data and approved by the U.S. EPA and, in accordance with, the EAOC. The total number of monitoring wells was reduced by one during the September sampling event as MOC-2 was damaged. Crews were not able to collect a sample from this well and therefor MOC-2 has been abandoned. Analytical results from the September 2013 semiannual event for groundwater sampling of field and inorganic constituents are presented in Table 2 and BTEX constituents in Table 3.

4.1.1 Source Area Wells

Wells PNR-5, PNR-14, and PNR-23 are the closest wells within the monitoring network to the source area in the vicinity of the Mesa-Biere 1-22 production well. TDS concentrations in PNR-23 showed no significant change since the sampling event in October 2012, while concentrations in PNR-5 and PNR-14 decreased slightly by 11 percent and 16 percent respectively compared to October 2012 values. TDS concentrations continue to decrease in these wells closest to the source area an average 71 percent since the activation of the remediation system in 2008. Chloride concentrations within the source area have decreased by an average of 34 percent since October 2012, and have decreased by 86 percent since the remediation system became operational in 2008.

4.1.2 Western Boundary

The westernmost extent of the brine plume is defined by 7 wells (PNR-7-13, PNR-8, PNR-16, PNR-19, PNR-34-07, PNR-35-07, PNR-39-08). PNR-16 is being monitored through an in-situ data logger, the majority of the remaining wells sampled during the September 2013 event showed an average decrease of 37 percent in chloride concentrations and a decrease on average of 12 percent in TDS when compared to data from the previous fall sampling event. Additionally, the monitoring wells indicate a

substantial decrease of 59 percent and 33 percent, in chloride and TDS concentrations respectively since activation of the remediation system.

The only exeption to the decreasing concentration trend along the western plume boundary is PNR-35-07, which exhibited increased chloride from the previous year.

PNR-8 exhibited an unusually dramatic decrease in chloride concentration from 2,640 mg/l chloride in October 2012 down to a concentration of 10 mg/l in May 2013. The sample was rerun in the laboratory confirming the results, and a subsequent resampling of PNR-8 has confirmed the field findings. The initial decrease in chloride concentration is reflected in a 70 percent decrease in the TDS concentrations from October 2012 and coincided with an equally dramatic rise in groundwater levels within PNR-8 which was 9 feet higher than in the previous fall or spring sampling events (Table 1). During the September 2013 sampling event, chloride concentrations again appear anomalous compared to previously recorded values, with a value of 455 mg/l, an order of magnitude less than expected, indicating that PNR-8 casing has likely been compromised.

4.1.3 Southern Boundary

Five monitoring wells (PNR-39-08, PNR-29, PNR-28, PNR-27, and PNR-33-06) are used to delineate the southernmost edge of the brine plume. PNR-29 and PNR-33-06 are being monitored through the use of CTD-diver data loggers and show no significant change in water quality as compared to the last 5 years of data. Average chloride concentrations in the remaining southern boundary wells showed a decrease of 26 percent since last year, and have a decreased by 51 percent since activation of the remediation system. TDS concentrations in these wells follow a similar trend and show a decrease of 21 percent in TDS concentration since last year at this time, and a decrease of 44 percent in concentrations since the remediation system became operational. These values provide continued evidence that the plume is not only being effectively contained to the south, but that the contaminant plume is decreasing in size.

4.1.4 BTEX Results

Of the monitoring wells analyzed for BTEX, one replacement well PNR-20-13 had benzene levels detected above quantitation limits with a concentration of 15 micrograms per liter (µg/L). This represents no change in concentration in PNR-20-13 compared to May 2013 values. Benzene was detected at levels lower than the reporting limit of 0.5 µg/L but above detection limits in PNR-7-13, PNR-19, PNR-23, and PNR-24, these results are considered estimated.

Toluene was detected lower than reporting limit of 1.0 µg/L and above the detection limit in well PNR-23 and PNR-24, and is therefore considered an estimate. Ethylbenzene was not detected above quantitation limits in any of the monitoring wells. Total xylenes were detected at levels lower than the reporting limit of 1.0 µg/L but above detection limits in PNR-24, this result is considered estimated.

4.2 Domestic Water Supply Wells

In accordance with the modified monitoring agreement, 3 domestic wells (M-27, M-28, and M-60) were also sampled in September 2013. These wells are no longer used for domestic supply purposes. In addition to the domestic wells, replacement well M-31-13 was sampled in place of M-31, which was plugged and abandoned in May 2013. M-28 and M-31-13 are immediately downgradient of the Mesa-Biere 1-22 well location and are completed on the Biere upper terrace. Well M-28 is the closest domestic well to the contaminant source (the Mesa-Biere 1-22 production well) and continued to show improvement in water quality, with a chloride concentration of 750 mg/L. This value represents a 97 percent decrease from the peak measured concentration and a 91 percent decrease since activation of the remediation system. TDS concentrations for M-28 mirrored this trend with an 89 percent reduction in concentration since the beginning of sampling in 2000. Groundwater chemistry for monitoring well M-31-13, drilled in May 2013, a replacement for M-31, located just south and slightly west of M-28, will be evaluated once there is a sufficient period of record of analytical results.

Well M-27, upgradient from the Mesa-Biere 1-22 well, exhibited no significant change in chloride concentration since activation of the remediation system, however chloride concentrations appear to be increasing slightly since the beginning of sampling. In September of 2013 M-27 showed a chloride concentration of 6,380 mg/L and a TDS concentration of 11,500 mg/L.

Well M-60, located to the southwest of the former production well in the lower Poplar River alluvial valley, continues to show elevated chloride concentrations of 2,920 mg/L, which is a 35 percent increase since the activation of the remediation system. The chloride concentration in this well has more than tripled since monitoring began in May 2000 and continues to rise.

Benzene was not detected in any of the former domestic wells sampled, however, replacement monitoring well M-31-13 had a concentration in September 2013 of 8.0 µg/L benzene, which is higher than the result in May 2013 which was 4.0 µg/L. No toluene, ethylbenzene, or total xylenes were detected in any of the domestic wells or replacement well M-31-13.

4.3 Brine Recovery Well Network

The Pioneer brine recovery well network is comprised of 12 recovery wells (PNR-RW-1, -2, -3, -4, -5, -6, -8, -9, -10, -11, -12, and -13) as shown in Figure 1. Recovery wells PNR-RW-9, -10, -11, and -13 are located near the Northern Tank Battery closest to the Mesa-Biere 1-22 well site. Wells PNR-RW-1,-2,-3,-4, and -5 are located just north of the Southern Tank Battery nearest the Class V Injection Well (SWD-1). The westernmost recovery wells are PNR-RW-6,-8, and -12.

The brine recovery wells nearest the Mesa-Biere 1-22 well site (and Northern Tank Battery), had an average chloride concentration of approximately 6,000 mg/L, a decrease in chloride concentration of 34 percent since last year at this time. The recovery wells closest to injection well SWD-1 and the Southern Tank Battery resulted in a September 2013 chloride concentration of approximately 8,700 mg/L, also showing a decrease of approximately 34 percent from the previous year. In the westernmost recovery wells, the average chloride concentration was approximately 8,700 mg/L, a 17 percent decrease compared to last year. System wide, the recovery wells exhibited a 50 percent decrease in chloride concentrations since activation of the remediation system in 2008.

The majority of the brine recovery wells have exhibited decreasing benzene concentrations over time with values reported during the September 2013 sampling event ranging from 1.5 µg/L (PNR-RW-4) to 8.5 µg/L (PNR-RW-10). Water quality information for the brine recovery wells is listed in Table 4. Benzene was detected at levels lower than the reporting limit but above detection limits in PNR-RW-5, and is therefore considered an estimate.

5. SUMMARY AND CONCLUSIONS

The results of the semiannual groundwater monitoring conducted in September 2013 in accordance with EAOC #SWDA 08-2001-0027 and the U.S. EPA September 2011 modified sampling and analysis plan for the Mesa-Biere 1-22 well site provide evidence for the following conclusions:

- Subsurface conditions surrounding the Mesa-Biere 1-22 well site are characterized by the heterogeneous site geology.
- Depth to groundwater for September 2013 on the Biere upper terrace averaged approximately 44.80 feet bgs (2032.37 feet msl).
- Groundwater flow in the study area is to the southwest with an average hydraulic gradient of approximately 0.001.
- Consistently high chloride levels have been observed in the replacement wells PNR-7-13 (18,500 mg/L) and PNR-20-13 (21,500 mg/L). These wells will be converted to brine recovery wells and added to the remediation system as soon as Right-of-Way and access can be obtained from the private land owner (PNR-7-13) and through the U.S. Department of Interior Bureau of Indian Affairs (PNR-20-13).
- Chlorides concentrations in PNR-35-07 appear to be increasing, having increased 137 percent since the site remediation system was activated and a 40 percent increase since last year. Monitoring results from the future sampling events will be closely evaluated for this well.
- Data suggests that the casing of monitoring well PNR-08 has been compromised. This well should be plugged and abandoned and the possibility of a replacement well considered in this area.
- CTD-diver data may indicate that northern boundary well USGS92-12 is exhibiting a difference in the average specific conductance (3.45 mS/cm) as measured by the diver compared to the 5 year field observation average (2.541 mS/cm). This is a 35 percent increase in the specific conductivity of the northern boundary monitoring well, however, it is only a 2.86% difference from the last measured specific conductivity of this well (3.354 mS/cm). USGS92-12 will be evaluated carefully during the next sampling round to determine if this is both a valid and significant difference in the diver and observed field data values.
- Benzene concentrations (where encountered) continue to show a decreasing trend throughout the monitoring network.

- Chloride concentrations in monitoring wells closest to the Mesa-Biere 1-22 well site have decreased an average of 86 percent since remediation system activation.
- Western and southern plume boundary (as defined through the monitoring network) chloride concentrations decreased by an average of 51 to 59 percent since the remediation system became operational.
- Current monitoring data indicate that the remediation system is not only effectively limiting plume migration to the south since activation of the system in 2008, but is reducing the overall size of the contaminant plume.

6. REFERENCES

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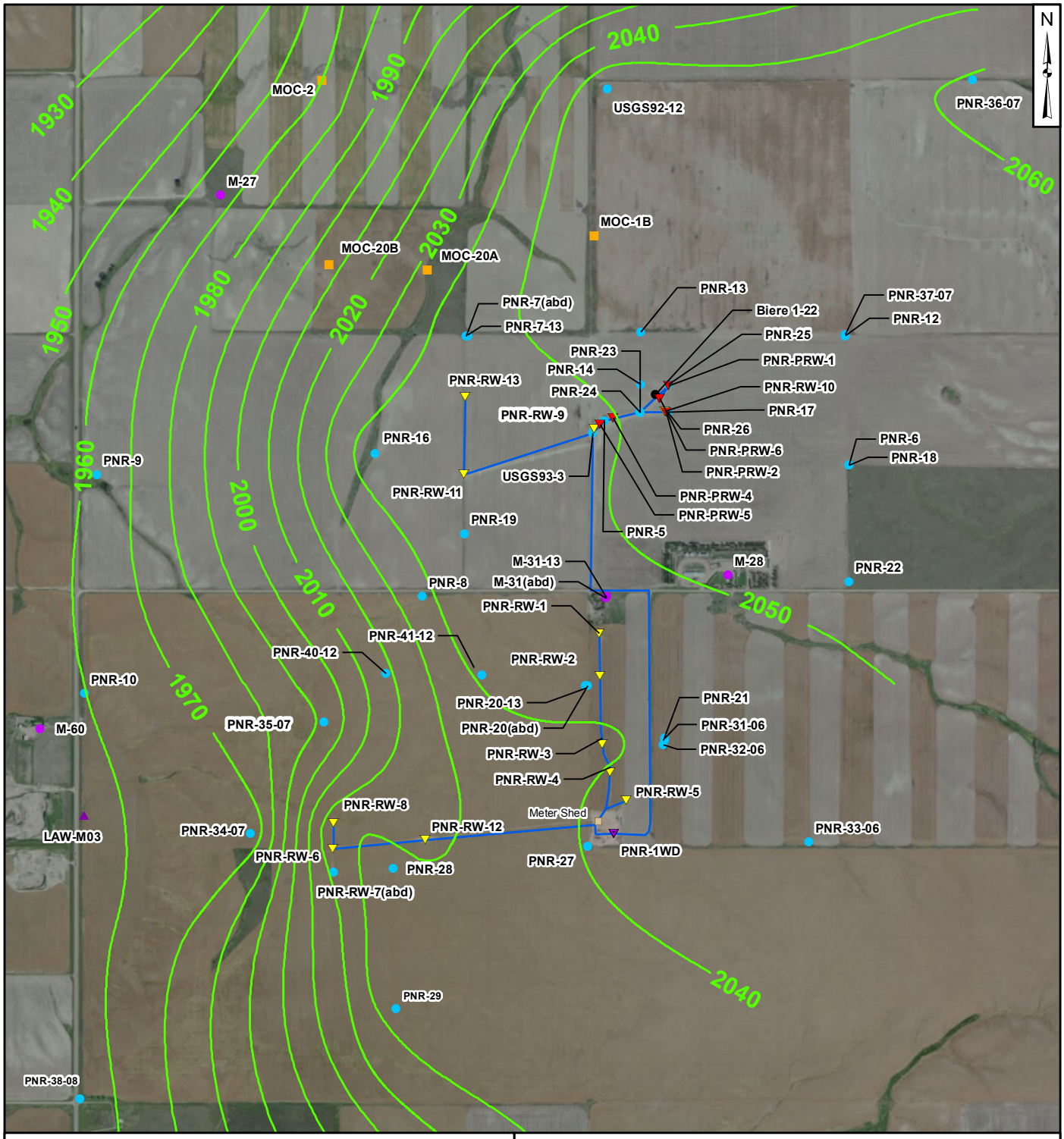
FIGURES



Legend

- Groundwater Surface Elevation (FT-MSL)
- Meter Shed
- Pioneer Monitoring Wells
- Pioneer Groundwater Recovery Wells
- Pioneer Product Recovery Wells
- Private Wells (Monitored by Pioneer)
- Land And Water Wells (LAW-MO3)
- Murphy Oil Company Wells
- Injection Wells
- Former Biere Wells (Producer, Relief & Injections)
- Remediation System Flowlines

1,500 750 0 1,500 Feet

Well Location and Groundwater Elevation Map
Mesa-Biere 1-22 Groundwater Investigation

September 2013 - Poplar, Montana

Geosyntec consultants

Seattle, Washington | 12/18/2013

Figure 1

Path: X:\Geosyntec\Seattle Office\Poplar\Poplar_Fig1_GW_Sep2013.mxd

TABLES

Table 1 - Water and Product Levels - Monitoring Well Network

Pioneer Natural Resources USA, Inc. - Mesa-Biere #1-22 Groundwater Investigation

Geosyntec Project No.: PNR0522

Last Update: 10/15/2013

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
LAW-M03		48.151394	105.150656	1986.45	1988.90	12/15/06		31.47		1957.43	
						03/13/07		39.99		1948.91	
						10/02/07		31.76		1957.14	
						03/25/08		31.38		1957.52	
						10/22/08		32.10		1956.80	
						04/14/12		29.82		1959.08	
						04/08/10		31.00		1957.90	
						09/15/10		31.61		1957.29	
						05/03/11		28.15		1960.75	
						07/07/11		26.48		1962.42	
						07/21/11		27.51		1961.39	
						05/14/12		29.79		1959.11	
						10/09/12		30.76		1958.14	
						05/06/13		27.92		1960.98	
						09/24/13		29.35		1959.55	
M-18		48.17665071	105.13918615	2047.10	2048.12	11/06/01		80.80		1967.32	
						02/19/02		80.25		1967.87	
						05/20/02		80.60		1967.52	
						08/19/02		80.60		1967.52	
						03/05/03		79.60		1968.52	
						05/12/03		79.00		1969.12	
						08/12/03		80.46		1967.66	
						03/18/04		80.47		1967.65	
						06/13/04		80.30		1967.82	
						03/02/05		80.70		1967.42	
						08/18/05		80.60		1967.52	
						08/22/06		80.76		1967.36	
						12/05/06		80.57		1967.55	
						12/02/07		80.86		1967.26	
						04/14/09		78.72		1969.40	
						09/30/09		80.37		1967.75	
						04/08/10		80.06		1968.06	
						09/15/10		80.71		1967.41	
						05/03/11		77.17		1970.95	
						07/22/11		77.51		1970.61	
						05/14/12		79.24		1968.88	
						10/09/12		80.24		1967.88	
						05/06/13		77.20		1970.92	
						09/24/13		79.18		1968.94	
M-27 (Reddoor)		48.16891547	105.14495142	2029.92	2031.19	08/13/01		67.15		1964.04	
						09/05/01		67.28		1963.91	
						11/06/01		67.61		1963.58	
						02/19/02		67.07		1964.12	
						05/20/02		67.04		1964.15	
						08/19/02		67.74		1963.45	
						11/04/02		67.70		1963.49	
						03/05/03		68.88		1962.31	
						05/12/03		66.60		1964.59	
						08/12/03		67.30		1963.89	
						11/09/03		68.00		1963.19	
						03/18/04		67.39		1963.80	
						06/07/04		66.05		1965.14	
						09/13/04		67.12		1964.07	
						11/18/04		67.42		1963.77	
						03/01/05		67.19		1964.00	
						05/24/05		67.24		1963.95	
						08/16/05		67.50		1963.69	
						11/15/05		67.66		1963.53	
						02/07/06		67.42		1963.77	
						05/23/06		66.88		1964.31	
						08/22/06		67.81		1963.38	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						12/05/06		67.66		1963.53	
						03/12/07		67.29		1963.90	
						10/02/07		67.80		1963.39	
						03/25/08		67.56		1963.63	
						10/22/08		67.97		1963.22	
						04/14/09		66.03		1965.16	
						09/30/09		67.48		1963.71	
						04/08/10		67.14		1964.05	
						09/15/10		67.55		1963.64	
						05/03/11		64.12		1967.07	
						07/22/11		63.32		1967.87	
						09/17/11		65.28		1965.91	
						05/14/12		66.11		1965.08	
						10/09/12		66.91		1964.28	
						05/06/13		64.95		1966.24	
						09/24/13		65.51		1965.68	
M-28 (Lockman)	1	48.158219	105.123474	2102.82	2096.63	05/31/01		49.23		2047.40	
						08/13/01		48.85		2047.78	
						09/05/01		48.61		2048.02	
						11/06/01		49.06		2047.57	
						02/19/02		49.00		2047.63	
						05/20/02		49.10		2047.53	
						08/19/02		49.62		2047.01	
						11/06/02		49.73		2046.90	
						03/05/03		49.39		2047.24	
						05/12/03		50.50		2046.13	
						08/12/03		49.92		2046.71	
						11/05/03		50.28		2046.35	
						03/16/04		50.01		2046.62	
						06/07/04		50.04		2046.59	
						09/15/04		49.85		2046.78	
						11/19/04		49.73		2046.90	
						03/01/05		49.78		2046.85	
						05/24/05		50.31		2046.32	
						08/16/05		50.11		2046.52	
						11/15/05		50.66		2045.97	
						02/07/06		50.58		2046.05	
						05/23/06		49.88		2046.75	
						08/22/06		50.28		2046.35	
						12/05/06		50.33		2046.30	
						03/12/07		50.25		2046.38	
						10/02/07		50.10		2046.53	
						03/25/08		50.45		2046.18	
						10/22/08		51.13		2045.50	
						04/14/09		50.95		2045.68	
						09/30/09		50.90		2045.73	
						04/08/10		51.52		2045.11	
						09/15/10		52.10		2044.53	
						05/03/11		51.54		2045.09	
						07/22/11		48.29		2048.34	
						09/17/11		47.49		2049.14	
						05/14/12		48.50		2048.13	
						10/09/12		48.48		2048.15	
						05/06/13		49.21		2047.42	
						09/24/13		46.02		2050.61	
M-31 (Trottier)		48.15755327		2085.00	2087.17	05/31/01		40.37		2046.80	
						08/13/01		40.26		2046.91	
						09/05/01		40.15		2047.02	
						11/06/01		40.33		2046.84	
						02/19/02		40.42		2046.75	
						05/20/02		40.77		2046.40	
						08/19/02		41.22		2045.95	
						11/04/02		41.18		2045.99	
						03/05/03		41.30		2045.87	
						05/12/03		40.87		2046.30	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						08/12/03		41.62		2045.55	
						11/05/03		41.86		2045.31	
						03/16/04		41.65		2045.52	
						06/07/04		41.85		2045.32	
						09/13/04		41.65		2045.52	
						11/18/04		41.52		2045.65	
						03/01/05		41.65		2045.52	
						05/24/05		41.91		2045.26	
						08/16/05		41.07		2046.10	
						11/15/05		41.27		2045.90	
						02/07/06		41.34		2045.83	
						05/23/06		41.20		2045.97	
						08/22/06		41.36		2045.81	
						12/05/06		41.71		2045.46	
						03/12/07		41.80		2045.37	
						10/02/07		41.82		2045.35	
						03/25/08		42.05		2045.12	
						10/22/08		42.81		2044.36	
						04/14/09		43.15		2044.02	
						09/30/09		43.85		2043.32	
						04/08/10		44.55		2042.62	
						09/15/10		44.87		2042.30	
						05/03/11		43.91		2043.26	
						07/23/11		40.30		2046.87	
						09/17/11		39.91		2047.26	
						05/14/12		41.14		2046.03	
						10/09/12		41.01		2046.16	
						05/06/13		41.84		2045.33	M-31 P&A on 5/11/13, Replaced with M-31-13
M-31-13		48.15761	105.1286068	2085.00	2086.90	5/11/2013		41.55		2045.35	
						9/24/2013		38.21		2048.69	
M-60 (Whitmer)		48.15387717	105.15303084	1980.41	1981.44	05/31/01		23.82		1957.62	
						11/06/01		24.30		1957.14	
						02/19/02		24.30		1957.14	
						05/20/02		24.10		1957.34	
						08/19/02		24.20		1957.24	
						11/04/02		24.30		1957.14	
						03/04/03		24.30		1957.14	
						05/12/03		24.20		1957.24	
						08/12/03		25.00		1956.44	
						03/18/04		24.10		1957.34	
						06/07/04		22.09		1959.35	
						09/16/04		23.90		1957.54	
						11/18/04		24.20		1957.24	
						03/02/05		24.10		1957.34	
						05/24/05		24.20		1957.24	
						08/16/05		24.03		1957.41	
						11/17/05		24.22		1957.22	
						02/09/06		23.84		1957.60	
						05/25/06		23.58		1957.86	
						08/22/06		24.40		1957.04	
						12/05/06		24.07		1957.37	
						03/12/07		23.51		1957.93	
						10/02/07		24.30		1957.14	
						03/25/08		23.98		1957.46	
						04/14/09		22.33		1959.11	
						09/30/09		23.85		1957.59	
						04/08/10		23.60		1957.84	
						09/15/10		24.21		1957.23	
						05/03/11		20.69		1960.75	
						07/23/11		20.30		1961.14	
						09/17/11		21.71		1959.73	
						05/14/12		22.40		1959.04	
						10/10/12		23.29		1958.15	
						05/06/13		20.52		1960.92	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						09/24/13		21.95		1959.49	
MOC-1B		48.16779183	105.12916806	2077.05	2079.51	11/06/01		28.25		2051.26	
						11/04/02		28.66		2050.85	
						06/07/04		28.48		2051.03	
						12/05/06		30.40		2049.11	
						03/12/07		30.41		2049.10	
						10/02/07		28.58		2050.93	
						03/25/08		30.29		2049.22	
						10/22/08		31.04		2048.47	
						04/14/09		30.15		2049.36	
						09/30/09		31.01		2048.50	
						04/08/10		30.68		2048.83	
						09/15/10		27.79		2051.72	
						05/03/11		23.13		2056.38	
						09/17/11		19.48		2060.03	
						05/14/12		26.71		2052.80	
						10/09/12		25.56		2053.95	
						05/06/13		25.42		2054.09	
						09/24/13		21.41		2058.10	
MOC-2		48.17220980	105.14003747	2036.12	2038.91	11/09/01		73.50		1965.41	
						12/05/06		73.60		1965.31	
						03/12/07		73.01		1965.90	
						10/02/07		73.80		1965.11	
						03/25/08		73.50		1965.41	
						10/22/08		74.12		1964.79	
						04/14/09		71.76		1967.15	
						09/30/09		73.27		1965.64	
						04/08/10		73.03		1965.88	
						09/15/10		73.66		1965.25	
						05/03/11		70.13		1968.78	
						07/22/11		70.28		1968.63	
						09/17/11		71.71		1967.20	
						05/14/12		72.11		1966.80	
						10/09/12		73.00		1965.91	
						05/06/13		70.90		1968.01	
						09/24/13		71.95		1966.96	Abandoned - well damaged, dropped from network
MOC-3		48.17861667	105.12938333	2008.48	2010.56	12/05/06		53.01		1957.55	
						03/12/07		53.93		1956.63	
						10/02/07		52.46		1958.10	
						03/25/08		52.93		1957.63	
						10/22/08		53.52		1957.04	
						04/14/09		52.50		1958.06	
						09/30/09		52.00		1958.56	
						04/08/10		52.74		1957.82	
						09/15/10		51.17		1959.39	
						05/03/11		49.03		1961.53	
						09/17/11		47.45		1963.11	
						05/14/12		50.16		1960.40	
						10/09/12		49.18		1961.38	
						05/06/13		48.83		1961.73	
						09/24/13		46.89		1963.67	
MOC-4		48.17953333	105.14033333	1965.05	1966.63	12/05/06		76.15		1890.48	
						03/13/07		75.62		1891.01	
						10/02/07		74.92		1891.71	
						03/25/08		74.57		1892.06	
						10/22/08		75.12		1891.51	
						04/14/09		72.64		1893.99	
						09/30/09		74.40		1892.23	
						04/08/10		74.03		1892.60	
						09/15/10		74.69		1891.94	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/03/11		71.13		1895.50	
						07/22/11		71.61		1895.02	
						09/17/11		73.70		1892.93	
						05/14/12		73.25		1893.38	
						10/09/12		74.24		1892.39	
						05/06/13		72.65		1893.98	
						09/24/13		73.27		1893.36	
MOC-20A		48.16680806	105.13620611	1990.93	1991.89	12/05/06		17.73		1974.16	
						03/12/07		19.66		1972.23	
						10/02/07		16.16		1975.73	
						03/25/08		16.66		1975.23	
						10/22/08		17.68		1974.21	
						04/14/09		18.45		1973.44	
						09/30/09		16.64		1975.25	
						04/08/10		17.24		1974.65	
						09/15/10		16.68		1975.21	
						05/03/11		11.77		1980.12	
						07/22/11		8.06		1983.83	
						09/17/11		11.11		1980.78	
						05/14/12		12.68		1979.21	
						10/09/12		14.86		1977.03	
						05/06/13		13.96		1977.93	
						09/24/13		10.44		1981.45	
MOC-20B		48.16695611	105.14033389	1924.46	1926.46	12/05/06		73.18		1853.28	
						03/12/07		72.60		1853.86	
						10/02/07		73.37		1853.09	
						03/25/08		73.07		1853.39	
						10/22/08		73.76		1852.70	
						04/14/09		71.47		1854.99	
						09/30/09		72.77		1853.69	
						04/08/10		72.67		1853.79	
						09/15/10		73.25		1853.21	
						05/03/11		69.72		1856.74	
						07/22/11		69.52		1856.94	
						09/17/11		71.01		1855.45	
						05/14/12		71.61		1854.85	
						10/09/12		72.58		1853.88	
						05/06/13		69.65		1856.81	
						09/24/13		71.35		1855.11	
PNR-5		48.16251968	105.12863362	2082.64	2085.56	05/31/00		37.17		2048.39	
						08/13/01		37.04		2048.52	
						09/05/01		36.99		2048.57	
						11/06/01		37.05		2048.51	
						02/19/02		37.22		2048.34	
						05/20/02		38.25		2047.31	
						08/19/02		38.76		2046.80	
						11/04/02		38.81		2046.75	
						03/05/03		38.70		2046.86	
						05/12/03		38.53		2047.03	
						08/12/03		39.15		2046.41	
						11/04/03		39.39		2046.17	
						03/16/04		39.58		2045.98	
						06/07/04		39.54		2046.02	
						09/13/04		39.18		2046.38	
						11/17/04		39.27		2046.29	
						03/02/05		39.50		2046.06	
						05/25/05		39.53		2046.03	
						08/17/05		39.35		2046.21	
						11/16/05		39.24		2046.32	
						02/09/06		39.67		2045.89	
						05/25/06		39.67		2045.89	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						08/22/06		39.78		2045.78	
						12/05/06		39.91		2045.65	
						03/12/07		39.83		2045.73	
						10/02/07		39.47		2046.09	
						10/22/08		40.17		2045.39	
						04/14/09		40.27		2045.29	
						09/30/09		39.95		2045.61	
						04/08/10		40.82		2044.74	
						09/15/10		41.42		2044.14	
						05/03/11		40.37		2045.19	
						07/22/11		35.69		2049.87	
						09/17/11		34.97		2050.59	
						05/14/12		37.65		2047.91	
						10/09/12		38.25		2047.31	
						05/06/13		39.19		2046.37	
						09/24/13		35.83		2049.73	
PNR-6		48.16132288	105.11839391	2116.53	2119.07	05/31/00		20.33		2098.74	
						08/13/01		20.55		2098.52	
						09/05/01		20.51		2098.56	
						11/06/01		21.02		2098.05	
						02/19/02		21.39		2097.68	
						05/20/02		21.65		2097.42	
						08/19/02		21.06		2098.01	
						11/04/02		21.23		2097.84	
						03/04/03		20.50		2098.57	
						05/12/03		22.12		2096.95	
						08/12/03		21.04		2098.03	
						11/04/03		21.60		2097.47	
						03/16/04		22.16		2096.91	
						06/07/04		20.32		2098.75	
						09/13/04		20.05		2099.02	
						11/17/04		20.78		2098.29	
						02/28/05		21.55		2097.52	
						05/23/05		21.88		2097.19	
						08/16/05		21.93		2097.14	
						11/15/05		22.47		2096.60	
						02/07/06		22.66		2096.41	
						05/23/06		22.35		2096.72	
						08/22/06		21.61		2097.46	
						12/05/06		20.96		2098.11	
						03/12/07		21.13		2097.94	
						10/02/07		19.24		2099.83	
						03/25/08		21.18		2097.89	
						10/22/08		19.81		2099.26	
						04/14/09		19.48		2099.59	
						09/30/09		17.91		2101.16	
						04/08/10		20.22		2098.85	
						09/15/10		14.15		2104.92	
						05/03/11		12.47		2106.60	
						07/21/11		11.16		2107.91	
						09/17/11		13.38		2105.69	
						05/14/12		15.65		2103.42	
						10/12/12		13.02		2106.05	
						05/06/13		13.32		2105.75	
						09/23/13		12.57		2106.50	
PNR-7	1	48.16494199	105.13457761	2069.59	2072.22	05/31/00		25.50		2046.72	
						08/13/01		25.19		2047.03	
						09/05/01		25.08		2047.14	
						11/06/01		25.47		2046.75	
						02/19/02		25.72		2046.50	
						05/20/02		26.20		2046.02	
						08/19/02		26.17		2046.05	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						11/04/02		26.54		2045.68	
						03/04/03		27.50		2044.72	
						05/12/03		27.39		2044.83	
						08/12/03		27.05		2045.17	
						11/04/03		27.40		2044.82	
						03/16/04		27.55		2044.67	
						06/07/04		27.32		2044.90	
						09/13/04		26.98		2045.24	
						11/17/04		27.35		2044.87	
						03/01/05		27.15		2045.07	
						05/23/05		27.90		2044.32	
						08/17/05		27.28		2044.94	
						11/16/05		27.78		2044.44	
						02/09/06		27.88		2044.34	
						05/24/06		28.09		2044.13	
						08/22/06		28.02		2044.20	
						12/05/06		27.92		2044.30	
						03/12/07		27.97		2044.25	
						10/04/07		28.07		2044.15	
						03/25/08		28.12		2044.10	
						10/22/08		28.87		2043.35	
						04/14/09		28.51		2043.71	
						09/30/09		28.07		2044.15	
						04/08/10		29.43		2042.79	
						09/15/10		29.72		2042.50	
						05/03/11		28.34		2043.88	
						07/22/11		23.12		2049.10	
						09/18/11		23.12		2049.10	
						05/14/12		26.11		2046.11	
						10/09/12		27.12		2045.10	
						05/06/13		28.24		2043.98	PNR-7 P&A on 5/11/13, Replaced with PNR-7-13
PNR-7-13		48.16494199	105.134476	2069.59	2071.27	05/10/13		27.55		2043.72	
						09/23/13		23.22		2048.05	
PNR-8	1	48.15758839	105.13641215	2060.21	2062.99	05/31/00		63.64		1999.35	
						08/13/01		63.53		1999.46	
						09/05/01		63.84		1999.15	
						11/06/01		64.54		1998.45	
						02/19/02		64.21		1998.78	
						05/20/02		64.40		1998.59	
						08/19/02		64.61		1998.38	
						11/04/02		64.56		1998.43	
						03/04/03		64.00		1998.99	
						05/12/03		64.84		1998.15	
						08/12/03		64.94		1998.05	
						11/04/03		68.50		1994.49	
						03/16/04		65.41		1997.58	
						06/07/04		64.98		1998.01	
						09/13/04		65.16		1997.83	
						11/17/04		65.61		1997.38	
						03/01/05		65.64		1997.35	
						05/23/05		65.94		1997.05	
						08/17/05		65.75		1997.24	
						11/16/05		66.26		1996.73	
						02/09/06		66.09		1996.90	
						05/24/06		65.77		1997.22	
						08/22/06		66.11		1996.88	
						12/05/06		66.09		1996.90	
						03/12/07		66.13		1996.86	
						10/04/07		66.41		1996.58	
						03/25/08		66.32		1996.67	
						10/22/08		66.91		1996.08	
						04/14/09		66.04		1996.95	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						09/30/09		65.97		1997.02	
						04/08/10		66.16		1996.83	
						09/15/10		66.25		1996.74	
						05/03/11		65.09		1997.90	
						07/21/11		62.43		2000.56	
						09/18/11		61.92		2001.07	
						05/14/12		62.50		2000.49	
						10/09/12		62.72		2000.27	
						05/06/13		53.48		2009.51	
						09/23/13		60.06		2002.93	
PNR-9		48.16103685	105.15064565	2014.11	2017.26	05/31/00		56.46		1960.80	
						08/13/01		57.29		1959.97	
						09/05/01		57.28		1959.98	
						11/06/01		57.61		1959.65	
						02/19/02		57.12		1960.14	
						05/20/02		57.08		1960.18	
						08/19/02		57.90		1959.36	
						11/04/02		57.29		1959.97	
						03/04/03		57.11		1960.15	
						05/12/03		56.47		1960.79	
						08/12/03		57.33		1959.93	
						11/04/03		57.40		1959.86	
						03/18/04		57.31		1959.95	
						06/07/04		56.04		1961.22	
						09/13/04		57.12		1960.14	
						11/16/04		57.26		1960.00	
						03/01/05		57.12		1960.14	
						05/24/05		57.19		1960.07	
						08/16/05		57.38		1959.88	
						11/15/05		57.74		1959.52	
						02/09/06		57.24		1960.02	
						05/23/06		56.69		1960.57	
						08/22/06		57.67		1959.59	
						12/05/06		57.39		1959.87	
						03/12/07		59.96		1957.30	
						10/02/07		57.73		1959.53	
						03/25/08		57.53		1959.73	
						10/22/08		58.00		1959.26	
						04/14/09		55.68		1961.58	
						09/30/09		57.21		1960.05	
						04/08/10		56.95		1960.31	
						09/15/10		57.56		1959.70	
						05/03/11		54.02		1963.24	
						07/07/11		53.07		1964.19	
						07/23/11		53.94		1963.32	
						09/17/11		55.29		1961.97	
						05/14/12		55.80		1961.46	
						10/09/12		56.48		1960.78	
						05/06/13		53.94		1963.32	
						09/24/13		55.55		1961.71	
PNR-10		48.15483645	105.15067713	2009.17	2011.69	05/31/00		53.93		1957.76	
						08/13/01		53.93		1957.76	
						09/05/01		54.03		1957.66	
						11/06/01		54.37		1957.32	
						02/19/02		53.88		1957.81	
						05/20/02		53.79		1957.90	
						08/19/02		54.27		1957.42	
						11/04/02		54.04		1957.65	
						03/04/03		53.84		1957.85	
						05/12/03		53.17		1958.52	
						08/12/03		54.11		1957.58	
						11/04/03		54.30		1957.39	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						03/18/04		53.99		1957.70	
						06/07/04		52.74		1958.95	
						09/13/04		53.85		1957.84	
						11/16/04		53.99		1957.70	
						03/01/05		53.80		1957.89	
						05/24/05		53.94		1957.75	
						08/16/05		54.11		1957.58	
						11/15/05		54.48		1957.21	
						02/07/06		54.03		1957.66	
						05/23/06		53.38		1958.31	
						08/22/06		54.42		1957.27	
						12/05/06		54.11		1957.58	
						03/12/07		53.55		1958.14	
						10/02/07		54.41		1957.28	
						03/25/08		54.03		1957.66	
						10/22/08		54.73		1956.96	
						04/14/09		54.42		1957.27	
						09/30/09		53.91		1957.78	
						04/08/10		53.65		1958.04	
						09/15/10		54.25		1957.44	
						05/03/11		50.76		1960.93	
						07/07/11		49.55		1962.14	
						07/21/11		50.25		1961.44	
						09/17/11		51.71		1959.98	
						05/14/12		52.42		1959.27	
						10/09/12		53.41		1958.28	
						05/06/13		50.57		1961.12	
						09/24/13		52.04		1959.65	
PNR-12	1	48.16499941	105.11848417	2098.44	2101.23	05/31/00		51.10		2050.13	
						08/13/01		49.90		2051.33	
						09/05/01		49.67		2051.56	
						11/06/01		50.52		2050.71	
						02/19/02		50.80		2050.43	
						05/20/02		51.40		2049.83	
						08/19/02		51.20		2050.03	
						11/04/02		50.86		2050.37	
						03/04/03		51.79		2049.44	
						05/12/03		51.95		2049.28	
						08/12/03		50.80		2050.43	
						11/04/03		54.10		2047.13	
						03/16/04		51.75		2049.48	
						06/07/04		51.01		2050.22	
						09/13/04		50.51		2050.72	
						11/16/04		51.05		2050.18	
						02/28/05		51.52		2049.71	
						05/23/05		51.74		2049.49	
						08/15/05		51.05		2050.18	
						11/15/05		51.98		2049.25	
						02/07/06		52.12		2049.11	
						05/23/06		51.54		2049.69	
						08/22/06		52.00		2049.23	
						12/05/06		52.00		2049.23	
						03/12/07		51.92		2049.31	
						10/02/07		51.20		2050.03	
						03/25/08		51.99		2049.24	
						10/22/08		52.76		2048.47	
						04/14/09		52.20		2049.03	
						09/30/09		51.18		2050.05	
						04/08/10		52.58		2048.65	
						09/15/10		51.36		2049.87	
						05/03/11		49.70		2051.53	
						07/21/11		43.60		2057.63	
						09/17/11		44.71		2056.52	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/14/12		48.88		2052.35	
						10/09/12		48.24		2052.99	
						05/06/13		48.98		2052.25	
						09/23/13		44.88		2056.35	
PNR-13		48.16506024	105.12720400	2079.38	2081.12	08/13/01		30.44		2050.68	
						09/05/01		30.19		2050.93	
						11/06/01		30.46		2050.66	
						02/19/02		31.48		2049.64	
						05/20/02		32.05		2049.07	
						08/19/02		32.32		2048.80	
						11/04/02		32.34		2048.78	
						03/04/03		32.96		2048.16	
						05/12/03		33.01		2048.11	
						08/12/03		32.50		2048.62	
						11/04/03		32.87		2048.25	
						03/16/04		33.20		2047.92	
						06/07/04		32.93		2048.19	
						09/13/04		32.48		2048.64	
						11/16/04		32.27		2048.85	
						03/01/05		32.92		2048.20	
						05/24/05		33.26		2047.86	
						08/17/05		36.33		2044.79	
						11/16/05		34.33		2046.79	
						02/08/06		33.29		2047.83	
						05/24/06		33.49		2047.63	
						08/22/06		33.58		2047.54	
						12/05/06		33.63		2047.49	
						03/12/07		33.62		2047.50	
						10/02/07		33.04		2048.08	
						03/25/08		33.56		2047.56	
						10/22/08		34.11		2047.01	
						04/14/09		33.89		2047.23	
						09/30/09		33.25		2047.87	
						04/08/10		34.35		2046.77	
						09/15/10		34.47		2046.65	
						05/03/11		32.65		2048.47	
						07/21/11		26.43		2054.69	
						09/17/11		27.27		2053.85	
						05/14/12		30.60		2050.52	
						10/09/12		30.44		2050.68	
						05/06/13		31.25		2049.87	
						09/24/13		27.31		2053.81	
PNR-14	1	48.16359291	105.12721653	2079.82	2082.11	08/13/01		32.50		2049.61	
						09/04/01		32.27		2049.84	
						11/06/01		32.30		2049.81	
						02/19/02		33.42		2048.69	
						05/20/02		33.77		2048.34	
						08/19/02		34.33		2047.78	
						11/04/02		34.27		2047.84	
						03/04/03		34.67		2047.44	
						05/12/03		34.71		2047.40	
						08/12/03		34.48		2047.63	
						11/05/03		34.75		2047.36	
						03/16/04		34.80		2047.31	
						06/07/04		34.71		2047.40	
						09/13/04		34.23		2047.88	
						11/17/04		34.43		2047.68	
						03/02/05		34.55		2047.56	
						05/25/05		34.78		2047.33	
						08/17/05		34.41		2047.70	
						11/16/05		34.64		2047.47	
						02/09/06		34.90		2047.21	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/24/06		34.96		2047.15	
						08/22/06		34.94		2047.17	
						12/05/06		35.10		2047.01	
						03/12/07		35.05		2047.06	
						10/02/07		34.57		2047.54	
						03/25/08		35.03		2047.08	
						10/22/08		35.49		2046.62	
						04/14/09		35.45		2046.66	
						09/30/09		35.05		2047.06	
						04/08/10		35.74		2046.37	
						09/15/10		36.00		2046.11	
						05/03/11		34.99		2047.12	
						07/07/11		29.40		2052.71	
						07/22/11		29.48		2052.63	
						09/18/11		29.82		2052.29	
						05/14/12		32.38		2049.73	
						10/09/12		32.61		2049.50	
						05/06/13		33.35		2048.76	
						09/23/13		29.58		2052.53	
PNR-15		48.16358984	105.12602010	2081.92	2084.10	08/13/01		33.86		2050.24	
						09/04/01		33.84		2050.26	
						11/06/01		34.30		2049.80	
						02/19/02		35.36		2048.74	
						05/20/02		35.87		2048.23	
						08/19/02		36.20		2047.90	
						11/04/02		36.22		2047.88	
						03/04/03	36.20	36.22	0.02	2047.89	
						05/12/03		36.81		2047.29	
						08/12/03		36.20		2047.90	
						11/05/03		36.26		2047.84	
						03/16/04		36.44		2047.66	
						06/07/04		36.31		2047.79	
						09/15/04		35.72		2048.38	
						11/17/04		36.00		2048.10	
						03/02/05		36.12		2047.98	
						05/25/05		36.39		2047.71	
						08/17/05		35.88		2048.22	
						11/16/05		36.17		2047.93	
						02/08/06		36.25		2047.85	
						05/24/06		36.48		2047.62	
						08/22/06		36.49		2047.61	
						12/05/06		36.65		2047.45	
						03/12/07		36.55		2047.55	
						10/02/07		36.98		2047.12	
						03/25/08		36.46		2047.64	
						10/22/08		36.97		2047.13	
						04/14/09		36.89		2047.21	
						09/30/09		36.44		2047.66	
						04/08/10		37.05		2047.05	
						09/15/10		37.11		2046.99	
						05/03/11		36.16		2047.94	
						07/22/11		30.30		2053.80	Well damaged and abandoned Sept 2011
PNR-16	1	48.16162051	105.13841211	2053.88	2056.80	08/13/01		13.83		2042.97	
						09/05/01		12.70		2044.10	
						11/06/01		14.50		2042.30	
						02/19/02		14.76		2042.04	
						05/20/02		13.76		2043.04	
						08/19/02		9.47		2047.33	
						11/04/02		11.69		2045.11	
						03/04/03		15.20		2041.60	
						05/12/03		10.21		2046.59	
						08/12/03		13.41		2043.39	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						11/04/03		15.42		2041.38	
						03/16/04		17.25		2039.55	
						06/07/04		7.49		2049.31	
						09/13/04		10.07		2046.73	
						11/16/04		11.90		2044.90	
						03/01/05		14.08		2042.72	
						05/24/05		12.67		2044.13	
						08/17/05		13.24		2043.56	
						11/15/05		15.89		2040.91	
						02/07/06		17.04		2039.76	
						05/24/06		13.54		2043.26	
						08/22/06		14.67		2042.13	
						12/05/06		14.36		2042.44	
						03/12/07		15.67		2041.13	
						10/02/07		16.20		2040.60	
						03/25/08		18.27		2038.53	
						10/22/08		14.40		2042.40	
						04/14/09		7.47		2049.33	
						09/30/09		13.26		2043.54	
						04/08/10		12.46		2044.34	
						09/15/10		9.08		2047.72	
						05/03/11		5.51		2051.29	
						07/07/11		6.68		2050.12	
						07/21/11		6.60		2050.20	
						09/17/11		9.76		2047.04	
						05/14/12		11.74		2045.06	
						10/09/12		10.56		2046.24	
						05/06/13		6.10		2050.70	
						09/23/13		9.11		2047.69	
PNR-17		48.16279856	105.12605886	2084.06	2086.14	08/13/01	30.40	55.62	25.22	2048.17	
						09/04/01	30.42	55.86	25.44	2048.09	
						11/06/01	30.98	55.86	24.88	2047.70	
						02/19/02	32.04	55.77	23.73	2046.98	
						05/20/02	32.75	NM		-	
						08/19/02	33.62	NM		-	
						11/04/02	37.68	40.43	2.75	2047.64	
						03/04/03	38.37	40.31	1.94	2047.19	
						05/12/03	38.55	40.42	1.87	2047.03	
						08/12/03	38.22	40.04	1.82	2047.37	
						11/06/03	38.28	41.11	2.83	2047.01	
						03/16/04	37.95	43.46	5.51	2046.54	
						06/07/04	37.83	43.33	5.50	2046.66	
						09/16/04	37.38	42.71	5.33	2047.16	
						11/17/04	38.19	40.65	2.46	2047.21	
						03/02/05	38.47	39.28	0.81	2047.43	
						05/25/05	38.55	40.15	1.60	2047.11	
						08/17/05	38.23	39.12	0.89	2047.64	
						11/16/05	38.54	38.64	0.10	2047.57	
						02/08/06	38.50	38.59	0.09	2047.61	
						05/24/06	38.78	39.02	0.24	2047.29	
						08/22/06	38.69	38.82	0.13	2047.41	
						12/05/06	39.87	39.96	0.09	2046.24	
						03/12/07	38.83	38.86	0.03	2047.30	
						10/02/07	38.32	38.35	0.03	2047.81	
						03/25/08	38.75	38.78	0.03	2047.38	
						10/22/08	39.21	39.24	0.03	2046.92	
						04/14/09	39.26	39.33	0.07	2046.86	
						09/30/09	38.90	39.00	0.10	2047.21	
						04/08/10	39.51	39.60	0.09	2046.60	
						09/15/10	39.55	39.71	0.16	2046.54	
						05/03/11	38.70	38.80	0.10	2047.41	
						07/22/11	33.19	33.21	0.02	2052.94	
						09/17/11	33.40	33.42	0.02	2052.73	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/14/12	36.06	36.08	0.02	2050.07	
						10/09/12	36.10	36.15	0.05	2050.03	
						05/06/13	36.85	36.86	0.01	2049.29	
						09/24/13	33.34	33.35	0.01	2052.80	
PNR-18	1	48.16131791	105.11841336	2116.21	2118.16	08/13/01		68.90		2049.26	
						09/05/01		68.58		2049.58	
						11/06/01		69.08		2049.08	
						02/19/02		69.11		2049.05	
						05/20/02		70.10		2048.06	
						08/19/02		69.71		2048.45	
						11/04/02		69.36		2048.80	
						03/04/03		70.02		2048.14	
						05/12/03		70.38		2047.78	
						08/12/03		69.65		2048.51	
						11/04/03		70.30		2047.86	
						03/16/04		70.10		2048.06	
						06/07/04		69.44		2048.72	
						09/13/04		69.39		2048.77	
						11/16/04		69.71		2048.45	
						02/28/05		69.96		2048.20	
						05/23/05		70.13		2048.03	
						08/15/05		69.92		2048.24	
						11/15/05		70.61		2047.55	
						02/07/06		70.63		2047.53	
						05/23/06		69.96		2048.20	
						08/22/06		70.40		2047.76	
						12/05/06		70.44		2047.72	
						03/12/07		70.24		2047.92	
						10/02/07		70.05		2048.11	
						03/25/08		70.40		2047.76	
						10/22/08		71.19		2046.97	
						04/14/09		70.77		2047.39	
						09/30/09		70.17		2047.99	
						04/08/10		71.23		2046.93	
						09/15/10		71.03		2047.13	
						05/03/11		70.32		2047.84	
						07/21/11		65.83		2052.33	
						09/17/11		65.58		2052.58	
						05/14/12		67.87		2050.29	
						10/09/12		67.63		2050.53	
						05/06/13		68.36		2049.80	
						09/23/13		64.86		2053.30	
PNR-19	1	48.15936650	105.13463710	2071.26	2073.23	08/13/01		25.75		2047.48	
						09/05/01		25.68		2047.55	
						11/06/01		25.98		2047.25	
						02/19/02		26.00		2047.23	
						05/20/02		26.37		2046.86	
						08/19/02		26.75		2046.48	
						11/04/02		26.86		2046.37	
						03/04/03		27.30		2045.93	
						05/12/03		27.52		2045.71	
						08/12/03		27.44		2045.79	
						11/04/03		27.58		2045.65	
						03/16/04		27.77		2045.46	
						06/07/04		27.67		2045.56	
						09/13/04		27.38		2045.85	
						11/16/04		27.46		2045.77	
						03/01/05		27.51		2045.72	
						05/25/05		27.90		2045.33	
						08/17/05		27.69		2045.54	
						11/16/05		27.85		2045.38	
						02/08/06		27.87		2045.36	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/24/06		28.13		2045.10	
						08/22/06		28.14		2045.09	
						12/05/06		28.29		2044.94	
						03/13/07		28.47		2044.76	
						10/02/07		28.22		2045.01	
						03/25/08		28.36		2044.87	
						10/22/08		28.56		2044.67	
						04/14/09		28.83		2044.40	
						09/30/09		29.96		2043.27	
						04/08/10		30.10		2043.13	
						09/15/10		30.22		2043.01	
						05/03/11		28.63		2044.60	
						07/22/11		24.03		2049.20	
						09/18/11		24.61		2048.62	
						05/14/12		26.48		2046.75	
						10/09/12		26.79		2046.44	
						05/06/13		27.44		2045.79	
						09/23/13		24.25		2048.98	
PNR-20		48.15507661	105.12943488	2084.55	2087.16	08/18/01		41.20		2045.96	
						09/05/01		41.05		2046.11	
						11/06/01		41.58		2045.58	
						02/19/02		41.41		2045.75	
						05/20/02		41.60		2045.56	
						08/19/02		41.91		2045.25	
						11/04/02		41.78		2045.38	
						03/04/03		42.30		2044.86	
						05/12/03		42.41		2044.75	
						08/12/03		42.39		2044.77	
						11/04/03		45.20		2041.96	
						03/16/04		42.56		2044.60	
						06/07/04		42.57		2044.59	
						09/13/04		42.37		2044.79	
						11/17/04		42.61		2044.55	
						03/01/05		42.37		2044.79	
						05/24/05		42.71		2044.45	
						08/16/05		42.56		2044.60	
						11/15/05		43.59		2043.57	
						02/09/06		42.72		2044.44	
						05/23/06		42.57		2044.59	
						08/22/06		42.82		2044.34	
						12/05/06		42.81		2044.35	
						03/12/07		42.80		2044.36	
						10/02/07		43.05		2044.11	
						03/25/08		43.10		2044.06	
						10/22/08		43.65		2043.51	
						04/14/09		44.87		2042.29	
						09/30/09		45.25		2041.91	
						04/08/10		47.05		2040.11	
						09/15/10		46.93		2040.23	
						05/03/11		45.36		2041.80	
						07/22/11		42.21		2044.95	
						09/17/11		42.88		2044.28	
						05/14/12		43.51		2043.65	
						10/09/12		42.41		2044.75	
						05/06/13		43.61		2043.55	PNR-20 P&A on 5/11/13, Replaced with PNR-20-13
PNR-20-13		48.15507661	105.12949800	2084.55	2085.50	05/09/13		41.49		2044.01	
						09/24/13		38.11		2047.39	
PNR-21		48.15353943	105.12615104	2099.04	2101.59	08/13/01		58.80		2042.79	
						09/05/01		58.68		2042.91	
						11/06/01		59.12		2042.47	
						02/19/02		58.81		2042.78	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/20/02		58.80		2042.79	
						08/19/02		59.02		2042.57	
						11/04/02		58.89		2042.70	
						03/05/03		58.78		2042.81	
						05/12/03		58.80		2042.79	
						08/12/03		59.32		2042.27	
						11/05/03		59.70		2041.89	
						03/16/04		59.46		2042.13	
						06/07/04		59.43		2042.16	
						09/13/04		59.31		2042.28	
						11/17/04		59.46		2042.13	
						03/01/05		59.23		2042.36	
						05/24/05		59.43		2042.16	
						08/16/05		59.35		2042.24	
						11/15/05		59.82		2041.77	
						02/09/06		59.64		2041.95	
						05/23/06		59.60		2041.99	
						08/22/06		59.53		2042.06	
						12/05/06		59.57		2042.02	
						03/12/07		59.46		2042.13	
						10/02/07		59.84		2041.75	
						03/25/08		59.82		2041.77	
						10/22/08		60.21		2041.38	
						04/14/09		61.07		2040.52	
						09/30/09		61.49		2040.10	
						04/08/10		62.03		2039.56	
						09/15/10		61.15		2040.44	
						05/03/11		61.85		2039.74	
						07/07/11		60.68		2040.91	
						07/22/11		60.39		2041.20	
						09/17/11		59.57		2042.02	
						05/14/12		59.16		2042.43	
						10/09/12		58.93		2042.66	
						05/06/13		59.49		2042.10	
						09/23/13		57.59		2044.00	
PNR-22		48.15802695	105.11839846	2127.38	2129.43	08/13/01		81.50		2047.93	
						09/05/01		81.21		2048.22	
						11/06/01		81.66		2047.77	
						02/19/02		81.48		2047.95	
						05/20/02		81.90		2047.53	
						08/19/02		82.11		2047.32	
						11/04/02		81.75		2047.68	
						03/04/03		82.41		2047.02	
						05/12/03		82.62		2046.81	
						08/12/03		82.22		2047.21	
						11/05/03		82.60		2046.83	
						03/16/04		82.47		2046.96	
						06/07/04		82.24		2047.19	
						09/13/04		81.98		2047.45	
						11/18/04		82.15		2047.28	
						03/01/05		82.22		2047.21	
						05/24/05		82.65		2046.78	
						08/16/05		82.52		2046.91	
						11/15/05		83.07		2046.36	
						02/07/06		83.08		2046.35	
						05/25/06		82.58		2046.85	
						08/22/06		82.78		2046.65	
						12/05/06		82.80		2046.63	
						03/12/07		82.60		2046.83	
						10/02/07		82.66		2046.77	
						03/25/08		82.82		2046.61	
						10/22/08		83.59		2045.84	
						04/14/09		83.25		2046.18	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						09/30/09		82.91		2046.52	
						04/08/10		83.90		2045.53	
						09/15/10		84.04		2045.39	
						05/03/11		83.55		2045.88	
						07/21/11		80.12		2049.31	
						09/17/11		79.32		2050.11	
						05/14/12		80.69		2048.74	
						10/09/12		80.52		2048.91	
						05/06/13		81.21		2048.22	
						09/27/13		78.36		2051.07	
PNR-23		48.16278810	105.12722428	2083.00	2085.27	08/13/01		35.85		2049.42	
						09/04/01		35.90		2049.37	
						11/06/01		36.03		2049.24	
						02/19/02		36.88		2048.39	
						05/20/02		37.35		2047.92	
						08/19/02		37.78		2047.49	
						11/04/02		37.81		2047.46	
						03/04/03		38.26		2047.01	
						05/12/03		38.34		2046.93	
						08/12/03		38.13		2047.14	
						11/06/03		38.36		2046.91	
						03/16/04		38.62		2046.65	
						06/07/04		38.51		2046.76	
						09/15/04		38.10		2047.17	
						11/17/04		38.35		2046.92	
						03/02/05		38.51		2046.76	
						05/25/05		38.78		2046.49	
						08/17/05		38.44		2046.83	
						11/16/05		38.57		2046.70	
						02/09/06		38.79		2046.48	
						05/25/06		38.67		2046.60	
						08/22/06		38.75		2046.52	
						12/05/06		38.90		2046.37	
						03/12/07		38.85		2046.42	
						10/02/07		38.36		2046.91	
						03/25/08		38.73		2046.54	
						10/22/08		39.08		2046.19	
						04/14/09		39.20		2046.07	
						09/30/09		38.92		2046.35	
						04/08/10		39.62		2045.65	
						09/15/10		40.13		2045.14	
						05/03/11		39.11		2046.16	
						07/22/11		34.28		2050.99	
						09/17/11		33.87		2051.40	
						05/14/12		36.41		2048.86	
						10/09/12		36.90		2048.37	
						05/06/13		37.69		2047.58	
						09/24/13		34.31		2050.96	
PNR-24		48.16279599	105.12721706	2083.00	2085.68	08/13/01		36.30		2049.38	
						09/04/01		36.31		2049.37	
						11/06/01		36.45		2049.23	
						02/19/02		37.17		2048.51	
						05/20/02		37.52		2048.16	
						08/19/02		37.88		2047.80	
						11/04/02	37.90	39.68	1.78	2047.25	
						03/04/03	38.38	40.05	1.67	2046.80	
						05/12/03	38.48	38.48	0.00	2047.20	
						08/12/03	38.39	39.35	0.96	2047.00	
						11/06/03	38.53	39.90	1.37	2046.74	
						03/16/04	38.70	44.30	5.60	2045.30	
						06/07/04	38.65	39.98	1.33	2046.63	
						09/15/04	38.33	38.51	0.18	2047.30	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						11/17/04	38.51	39.21	0.70	2046.96	
						03/02/05	38.61	39.50	0.89	2046.80	
						05/25/05	38.74	39.91	1.17	2046.59	
						08/17/05	38.54	38.89	0.35	2047.04	
						11/16/05	38.65	39.09	0.44	2046.90	
						02/08/06	38.63	39.24	0.61	2046.87	
						05/24/06	38.90	39.87	0.97	2046.49	
						08/22/06	38.86	39.85	0.99	2046.52	
						12/05/06	39.12	39.75	0.63	2046.37	
						03/12/07	39.06	39.26	0.20	2046.56	
						10/02/07		38.65		2047.03	
						03/25/08		39.05		2046.63	
						10/22/08	39.42	39.52	0.10	2046.23	
						04/14/09	39.45	39.61	0.16	2046.18	
						09/30/09	39.20	39.45	0.25	2046.41	
						04/08/10	39.84	NM		-	
						09/15/10	40.30	NM		-	
						05/03/11	39.51	39.64	0.13	2046.13	
						07/22/11		34.72		2050.96	
						09/17/11	34.26	34.27	0.01	2051.42	
						05/14/12		36.79		2048.89	
						10/09/12		37.29		2048.39	
						05/06/13		38.08		2047.60	
						09/24/13		34.71		2050.97	
PNR-25		48.16357350	105.12604522	2081.92	2084.03	08/13/01	33.78	34.08	0.3	2050.16	
						09/04/01		33.73		2050.30	
						11/06/01		34.09		2049.94	
						02/19/02	34.98	36.63	1.65	2048.56	
						05/20/02	35.36	NM		-	
						08/19/02	35.64	NM		-	
						11/04/02	35.55	37.48	1.93	2047.90	
						03/04/03	35.91	38.04	2.13	2047.48	
						05/12/03	36.02	38.04	2.02	2047.40	
						08/12/03	35.62	37.03	1.41	2047.99	
						11/05/03	35.15	37.50	2.35	2048.18	
						03/16/04	35.93	38.00	2.07	2047.48	
						06/07/04	35.86	37.53	1.67	2047.67	
						09/15/04	35.37	36.58	1.21	2048.30	
						11/17/04	35.60	37.08	1.48	2047.99	
						03/02/05	35.66	37.35	1.69	2047.86	
						05/25/05	35.90	37.86	1.96	2047.54	
						08/17/05	35.55	37.03	1.48	2048.04	
						11/16/05	35.77	37.51	1.74	2047.74	
						02/08/06	35.82	37.88	2.06	2047.59	
						05/24/06	36.01	38.12	2.11	2047.39	
						08/22/06	36.04	38.19	2.15	2047.35	
						12/05/06	36.15	38.30	2.15	2047.24	
						03/12/07	36.12	38.23	2.11	2047.28	
						10/02/07	35.65	37.02	1.37	2047.97	
						03/25/08	36.05	37.89	1.84	2047.43	
						10/22/08	38.58	39.98	1.4	2045.03	
						04/14/09	36.37	38.52	2.15	2047.02	
						09/30/09	36.05	37.75	1.7	2047.47	
						04/08/10	36.68	38.90	2.22	2046.68	
						09/15/10	36.74	38.31	1.57	2046.82	
						05/03/11	35.94	37.25	1.31	2047.70	
						07/22/11		28.00		2056.03	
						09/17/11		31.12		2052.91	
						05/14/12	33.34	33.39	0.05	2050.68	
						10/09/12	33.39	34.27	0.88	2050.38	
						05/06/13	34.11	35.11	1.00	2049.62	
						09/24/13	31.10	31.25	0.15	2052.89	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
PNR-26		48.16280744	105.12607437	2084.07	2086.15	08/13/01	34.65	36.85	2.20	2050.84	
						09/04/01	35.96	37.12	1.16	2049.84	
						11/06/01	36.24	37.12	0.88	2049.65	
						02/19/02	36.98	39.30	2.32	2048.47	
						05/20/02	37.43	NM		-	
						08/19/02	37.78	NM		-	
						11/04/02	37.76	40.15	2.39	2047.67	
						03/04/03	38.11	40.07	1.96	2047.45	
						05/12/03	38.20	40.09	1.89	2047.38	
						08/12/03	37.82	39.98	2.16	2047.68	
						11/06/03	37.93	39.99	2.06	2047.60	
						03/16/04	38.80	40.01	1.21	2046.99	
						06/07/04	38.02	40.02	2.00	2047.53	
						09/16/04	37.60	39.73	2.13	2047.91	
						11/17/04	37.79	39.98	2.19	2047.70	
						03/02/05	37.87	40.00	2.13	2047.64	
						05/25/05	38.01	39.92	1.91	2047.57	
						08/17/05	37.78	40.00	2.22	2047.70	
						11/16/05	37.92	40.00	2.08	2047.61	
						02/08/06	37.90	40.01	2.11	2047.62	
						05/24/06	38.23	40.05	1.82	2047.37	
						08/22/06	38.18	40.04	1.86	2047.41	
						12/05/06	38.35	40.05	1.7	2047.29	
						03/12/07	38.34	40.03	1.69	2047.30	
						10/02/07	37.94	40.03	2.09	2047.58	
						03/25/08	38.24	39.99	1.75	2047.39	
						10/22/08	36.44	38.50	2.06	2049.09	
						04/14/09	38.71	39.95	1.24	2047.07	
						09/30/09	38.50	39.95	1.45	2047.22	
						04/08/10	39.10	39.90	0.80	2046.81	
						09/15/10	39.13	39.95	0.82	2046.77	
						05/03/11	38.47	39.84	1.37	2047.27	
						07/22/11	30.15	30.47	0.32	2055.90	
						09/17/11	33.89	34.66	0.77	2052.03	
						05/14/12	35.33	39.35	4.02	2049.61	
						10/09/12	35.53	39.20	3.67	2049.52	
						05/06/13	36.44	39.86	3.42	2048.68	
						09/24/13	32.78	36.11	3.33	2052.37	
PNR-27		48.15052571	105.12940850	2092.86	2095.30	09/05/01		67.28		2028.02	
						11/06/01		55.68		2039.62	
						02/19/02		55.32		2039.98	
						05/20/02		55.25		2040.05	
						08/19/02		55.34		2039.96	
						11/04/02		55.25		2040.05	
						03/05/03		55.17		2040.13	
						05/12/03		55.62		2039.68	
						08/12/03		55.67		2039.63	
						11/05/03		56.20		2039.10	
						06/07/04		56.80		2038.50	
						09/13/04		55.73		2039.57	
						11/17/04		55.91		2039.39	
						03/02/05		55.63		2039.67	
						05/24/05		55.79		2039.51	
						08/16/05		55.64		2039.66	
						11/15/05		56.04		2039.26	
						02/08/06		55.65		2039.65	
						05/23/06		55.66		2039.64	
						08/22/06		55.85		2039.45	
						12/05/06		55.92		2039.38	
						03/12/07		55.79		2039.51	
						10/02/07		56.23		2039.07	
						03/25/08		56.20		2039.10	
						10/22/08		56.52		2038.78	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						04/14/09		57.02		2038.28	
						09/30/09		57.25		2038.05	
						04/08/10		57.72		2037.58	
						09/15/10		58.16		2037.14	
						05/03/11		58.07		2037.23	
						07/07/11		57.45		2037.85	
						07/21/11		57.20		2038.10	
						09/17/11		56.27		2039.03	
						05/14/12		55.50		2039.80	
						10/09/12		55.57		2039.73	
						05/06/13		55.91		2039.39	
						09/24/13		54.81		2040.49	
PNR-28	1	48.14990863	105.13761028	2079.64	2078.44	09/05/01		46.38		2032.06	
						11/06/01		44.85		2033.59	
						02/19/02		44.67		2033.77	
						05/20/02		44.45		2033.99	
						08/19/02		44.59		2033.85	
						11/04/02		44.55		2033.89	
						03/05/03		44.49		2033.95	
						05/12/03		44.40		2034.04	
						08/12/03		44.89		2033.55	
						11/05/03		46.20		2032.24	
						06/07/04		45.24		2033.20	
						09/15/04		45.19		2033.25	
						11/17/04		45.28		2033.16	
						03/01/05		45.06		2033.38	
						05/25/05		45.23		2033.21	
						08/16/05		45.02		2033.42	
						11/15/05		45.61		2032.83	
						02/08/06		45.17		2033.27	
						05/23/06		45.17		2033.27	
						08/22/06		45.21		2033.23	
						12/05/06		45.37		2033.07	
						03/12/07		45.24		2033.20	
						10/02/07		45.65		2032.79	
						03/25/08		45.55		2032.89	
						10/22/08		45.74		2032.70	
						04/14/09		45.91		2032.53	
						09/30/09		45.99		2032.45	
						04/08/10		46.37		2032.07	
						09/15/10		48.03		2030.41	
						05/03/11		48.52		2029.92	
						07/21/11		47.05		2031.39	
						09/18/11		45.98		2032.46	
						05/14/12		45.42		2033.02	
						10/09/12		46.16		2032.28	
						05/06/13		46.45		2031.99	
						09/23/13		45.05		2033.39	
PNR-29	1	48.14594617	105.13748068	2073.76	2072.64	09/05/01		46.38		2026.26	
						11/06/01		44.85		2027.79	
						02/19/02		44.67		2027.97	
						05/20/02		44.45		2028.19	
						08/19/02		44.59		2028.05	
						11/04/02		44.55		2028.09	
						03/05/03		44.49		2028.15	
						05/12/03		44.40		2028.24	
						08/12/03		44.89		2027.75	
						11/05/03		46.20		2026.44	
						06/07/04		45.24		2027.40	
						09/15/04		45.19		2027.45	
						11/17/04		45.28		2027.36	
						03/01/05		45.06		2027.58	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						05/25/05		45.23		2027.41	
						08/16/05		45.02		2027.62	
						11/15/05		45.61		2027.03	
						02/08/06		45.17		2027.47	
						05/23/06		45.17		2027.47	
						08/22/06		45.21		2027.43	
						12/05/06		45.37		2027.27	
						03/12/07		45.24		2027.40	
						10/02/07		45.65		2026.99	
						03/25/08		45.55		2027.09	
						10/22/08		45.74		2026.90	
						04/14/09		45.91		2026.73	
						09/30/09		45.99		2026.65	
						04/08/10		46.37		2026.27	
						09/15/10		48.03		2024.61	
						05/03/11		48.52		2024.12	
						07/21/11		41.04		2031.60	
						09/18/11		45.98		2026.66	
						05/14/12		45.42		2027.22	
						10/09/12		40.50		2032.14	
						05/06/13		40.83		2031.81	
						09/23/13		39.26		2033.38	
PNR-30-06		48.16224721	105.12915634	2081.77	2083.55	10/19/06		37.91		2045.64	
						12/05/06	37.50	40.70	3.20	2045.09	
						03/12/07	37.39	40.86	3.47	2045.12	
PNR-31-06		48.15359490	105.12613351	2098.91	2100.98	10/19/06		58.69		2042.29	
						12/05/06		58.85		2042.13	
						03/12/07		58.59		2042.39	
						10/02/07		58.95		2042.03	
						03/25/08		58.86		2042.12	
						04/14/09		60.15		2040.83	
						09/30/09		60.58		2040.40	
						04/08/10		61.11		2039.87	
						09/15/10		61.22		2039.76	
						07/22/11		59.45		2041.53	
						09/17/11		58.80		2042.18	
						05/14/12		58.25		2042.73	
						10/09/12		58.04		2042.94	
						05/06/13		58.62		2042.36	
						09/23/13		56.66		2044.32	
PNR-32-06		48.15342240	105.12619759	2098.17	2100.01	10/19/06		57.87		2042.14	
						12/05/06		58.00		2042.01	
						03/12/07		57.80		2042.21	
						10/02/07		58.16		2041.85	
						03/25/08		58.14		2041.87	
						04/14/09		59.44		2040.57	
						09/30/09		59.96		2040.05	
						04/08/10		60.45		2039.56	
						09/15/10		60.55		2039.46	
						07/22/11		58.93		2041.08	
						09/17/11		58.08		2041.93	
						05/14/12		57.60		2042.41	
						05/06/13		57.92		2042.09	
						09/23/13		56.07		2043.94	
PNR-33-06	1	48.15054811	105.12009813	2142.86	2144.53	10/19/06		102.50		2042.03	
						12/05/06		100.76		2043.77	
						03/12/07		102.35		2042.18	
						10/02/07		102.81		2041.72	
						03/25/08		102.89		2041.64	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						10/22/08		103.52		2041.01	
						04/14/09		103.32		2041.21	
						09/30/09		103.27		2041.26	
						04/08/10		103.75		2040.78	
						09/15/10		104.50		2040.03	
						05/02/11		104.33		2040.20	
						07/21/11		103.30		2041.23	
						09/17/11		100.95		2043.58	
						05/14/12		102.02		2042.51	
						10/09/12		101.86		2042.67	
						05/06/13		102.15		2042.38	
						09/23/13		100.81		2043.72	
PNR-34-07	1	48.15102805	105.14361828	2053.42	2052.14	03/12/07		93.84		1958.30	
						10/02/07		94.31		1957.83	
						03/25/08		94.20		1957.94	
						10/22/08		94.89		1957.25	
						04/14/09		93.35		1958.79	
						09/30/09		93.90		1958.24	
						04/08/10		93.93		1958.21	
						09/15/10		94.40		1957.74	
						05/03/11		91.86		1960.28	
						07/21/11		90.20		1961.94	
						09/18/11		91.85		1960.29	
						05/14/12		92.58		1959.56	
						10/09/12		93.44		1958.70	
						05/06/13		94.23		1957.91	
						09/23/13		91.08		1961.06	
PNR-35-07		48.15393598	105.14012555	2060.91	2059.75	03/12/07		71.15		1988.60	
						10/02/07		71.55		1988.20	
						03/25/08		71.37		1988.38	
						10/22/08		71.34		1988.41	
						04/14/09		71.19		1988.56	
						09/30/09		71.24		1988.51	
						04/08/10		71.30		1988.45	
						09/15/10		71.69		1988.06	
						05/03/11		71.74		1988.01	
						07/21/11		70.79		1988.96	
						09/18/11		70.64		1989.11	
						05/14/12		69.71		1990.04	
						10/09/12		69.77		1989.98	
						05/06/13		68.86		1990.89	
						09/24/13		69.06		1990.69	
PNR-36-07	1	48.17222678	105.11320318	2104.80	2107.01	03/12/07		54.74		2052.27	
						10/02/07		53.88		2053.13	
						03/25/08		54.76		2052.25	
						10/22/08		55.57		2051.44	
						04/14/09		54.95		2052.06	
						09/30/09		53.70		2053.31	
						04/08/10		54.96		2052.05	
						09/15/10		52.82		2054.19	
						05/03/11		51.30		2055.71	
						09/18/11		45.89		2061.12	
						05/14/12		50.94		2056.07	
						10/09/12		49.81		2057.20	
						05/06/13		50.90		2056.11	
						09/23/13		46.27		2060.74	
PNR-37-07		48.16501638	105.11853374	2097.50	2100.52	10/02/07		50.41		2050.11	
						03/25/08		51.18		2049.34	
						04/14/09		51.41		2049.11	
						09/30/09		50.36		2050.16	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						04/08/10		51.75		2048.77	
						09/15/10		50.57		2049.95	
						05/03/11		48.84		2051.68	
						09/18/11		44.12		2056.40	
						05/14/12		48.11		2052.41	
						05/06/13		48.20		2052.32	
						09/23/13		44.11		2056.41	
PNR-38-08		48.14339606	105.15079588	2038.21	2039.34	03/25/08		86.52		1952.82	
						10/22/08		87.93		1951.41	
						04/14/09		85.81		1953.53	
						09/30/09		86.86		1952.48	
						04/08/10		86.65		1952.69	
						09/15/10		87.34		1952.00	
						05/03/11		84.03		1955.31	
						07/07/11		82.14		1957.20	
						07/21/11		82.67		1956.67	
						09/17/11		84.33		1955.01	
						05/14/12		85.59		1953.75	
						10/09/12		86.40		1952.94	
						05/06/13		83.75		1955.59	
						09/24/13		85.08		1954.26	
PNR-39-08		48.14742866	105.14461328	2052.80	2055.27	10/22/08		98.38		1956.89	
						04/14/09		96.71		1958.56	
						09/30/09		97.46		1957.81	
						04/08/10		97.63		1957.64	
						09/15/10		98.41		1956.86	
						05/03/11		96.09		1959.18	
						07/07/11		94.36		1960.91	
						07/21/11		94.73		1960.54	
						09/18/11		96.25		1959.02	
						05/14/12		96.92		1958.35	
						10/09/12		97.68		1957.59	
						05/06/13		95.43		1959.84	
						09/23/13		98.08		1957.19	
PNR-40-12	1	48.15540989	105.13791104	2072.29	2070.07	05/18/12		11.12		2058.95	
						10/09/12		15.26		2054.81	
						05/06/13		23.47		2046.60	
						09/23/13		4.45		2065.62	
PNR-41-12		48.15538179	105.13385045	2075.16	2073.22	05/18/12		35.61		2037.61	
						10/09/12		32.46		2040.76	
						05/06/13		32.82		2040.40	
						09/24/13		31.46		2041.76	
USGS92-12	1	48.17200507	105.12915109	2063.92	2065.92	05/31/01		15.10		2050.82	
						08/13/01		10.70		2055.22	
						09/05/01		12.12		2053.80	
						11/06/01		13.11		2052.81	
						02/19/02		13.85		2052.07	
						05/20/02		13.65		2052.27	
						08/19/02		12.68		2053.24	
						11/04/02		12.77		2053.15	
						03/04/03		14.20		2051.72	
						05/12/03		12.58		2053.34	
						08/12/03		11.99		2053.93	
						11/05/03		17.10		2048.82	
						06/07/04		10.75		2055.17	
						09/14/04		10.70		2055.22	
						11/16/04		12.35		2053.57	
						03/01/05		13.28		2052.64	
						05/25/05		12.02		2053.90	

Table 1. Water and Product Levels - Monitoring Well Network
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	site foot-note	Latitude	Longitude	Ground Surface Elevation (ft msl)	Measure Point Elevation (ft msl)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thick-ness (ft)	Ground-water Elevation (ft msl)	Notes
						08/17/05		11.00		2054.92	
						11/15/05		12.50		2053.42	
						02/07/06		13.08		2052.84	
						05/24/06		12.22		2053.70	
						08/22/06		14.04		2051.88	
						12/05/06		14.90		2051.02	
						03/12/07		14.97		2050.95	
						10/02/07		12.84		2053.08	
						03/25/08		14.47		2051.45	
						10/22/08		14.83		2051.09	
						04/14/09		10.90		2055.02	
						09/30/09		11.33		2054.59	
						04/08/10		12.75		2053.17	
						09/15/10		8.79		2057.13	
						05/03/11		6.83		2059.09	
						09/17/11		7.68		2058.24	
						05/14/12		9.60		2056.32	
						10/09/12		9.80		2056.12	
						05/06/13		7.51		2058.41	
						09/23/13		7.61		2058.31	
USGS93-03		48.16220690	105.12923578	2082.10	2083.46	05/31/01		35.07		2048.39	
						11/06/01		35.22		2048.24	
						02/19/02		35.72		2047.74	
						05/20/02		36.30		2047.16	
						08/19/02		36.75		2046.71	
						11/04/02		36.81		2046.65	
						03/04/03		37.20		2046.26	
						05/12/03		37.23		2046.23	
						08/12/03		37.16		2046.30	
						11/04/03		37.32		2046.14	
						03/16/04		39.58		2043.88	
						06/07/04		37.47		2045.99	
						09/14/04		37.07		2046.39	
						11/17/04		37.25		2046.21	
						03/01/05		37.26		2046.20	
						05/25/05		37.52		2045.94	
						08/17/05		37.35		2046.11	
						11/16/05		37.41		2046.05	
						02/09/06		37.75		2045.71	
						05/24/06		37.90		2045.56	
						08/22/06		37.92		2045.54	
						12/05/06		38.00		2045.46	
						03/12/07		38.02		2045.44	
						10/02/07		37.72		2045.74	
						03/25/08		38.04		2045.42	
						10/22/08		38.40		2045.06	
						04/14/09		38.51		2044.95	
						09/30/09		38.00		2045.46	
						04/08/10		39.07		2044.39	
						09/15/10		39.88		2043.58	
						05/03/11		38.71		2044.75	
						09/17/11		33.06		2050.40	
						05/14/12		35.99		2047.47	
						10/09/12		36.72		2046.74	
						05/06/13		37.97		2045.49	
						09/24/13		34.49		2048.97	

Notes:

Groundwater elevation corrected for LNAPL thickness; Corrected Depth to Water = Depth to Water - .7 x Accum. LNAPL.

All elevations are provided in feet above mean sea level (MSL)

Coordinate System: MT State Plan NAD83, Horz is in INT Feet, Vert is in US Feet (NGVD 88)

New wells PNR-7-13, PNR-20-13, and M-31-13 have not yet been surveyed, value is based on best available information.

[1] DL - Data logger deployed. Additional data available for this site.

Table 2 - Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Mesa-Biere #1-22 Groundwater Investigation
Geosyntec Project No.: PNR0522
Last Update: 10/17/2013

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Flouride mg/L	Iron mg/L
Hendrikson	11/09/2001	9:00	3.1	7.20	-	7.20	-	-	321	392	134	< 1	821	701	89	-	0.3	< 0.05	7.5	9	-	14.5	416	1,890	3.26	172	-	-
LAW-M01	04/20/2009	14:30	3.009	9.39	1.09	6.84	-	-	638	778	274	< 4	29	1,370	166	-	0.5	1.8	7.2	17	25.3	25	208	2,420	2.9	1,120	0.30	-
LAW-M03	03/13/2007	17:40	6.115	9.70	0.24	7.25	-	-	429	524	396	< 4	1,370	1,960	237	-	2.0	< 0.05	7.1	14	32.2	-	690	4,270	6.4	1,100	0.22	-
LAW-M03	03/27/2008	10:30	6.848	9.73	0.20	7.12	-	-	419	511	416	[3] < 4	1,560	2,070	250	-	1.7	< 0.05	7.1	9	23.4	[3] 25.7	[3] 705	4,560	6.95	1,120	0.20	-
LAW-M03	10/23/2008	15:35	6.868	10.02	0.36	7.17	-	-	423	516	443	< 4	1,530	2,220	270	-	2.1	< 0.05	7.0	10	23.3	26.9	736	4,680	6.9	1,210	0.20	-
LAW-M03	04/18/2009	15:40	7.627	10.03	0.39	6.94	-	-	393	480	448	< 4	1,540	[2] 2,230	270	-	2.0	< 0.05	7.0	13	22.4	[3] 25	[3] 746	4,260	7.26	1,110	0.20	-
LAW-M03	04/13/2010	16:45	7.450	9.63	0.52	7.02	-	-	393	480	465	< 4	1,920	[2] 2,330	283	-	2.0	< 0.01	7.0	14	23.7	[3] 27	[3] 842	5,300	7.62	997	[3] 0.20	-
LAW-M03	05/05/2011	16:30	8.130	9.46	0.22	6.87	-	-	396	483	484	< 4	2,040	2,400	289	-	1.7	0.01	7.0	14	24.1	29	831	5,680	7.54	1,170	0.20	-
LAW-M05	04/20/2009	17:30	5.321	9.83	0.28	6.88	-	-	577	704	378	< 4	551	2,060	270	-	0.8	8.27	7.2	15	19.9	[3] 51	[3] 501	3,030	5.23	1,640	[3] 0.20	-
M-10	04/16/2009	15:10	2.131	5.00	0.68	7.11	-	-	314	383	144	< 4	94	673	76	-	< 0.1	< 0.05	7.5	9	12.8	14	217	1,520	2.14	720	0.30	-
M-18	11/08/2001	15:30	-	17.20	-	-	-	-	111	135	669	< 1	5,190	2,920	303	-	37.5	< 0.05	5.9	32	-	< 3	1,630	8,600	13.5	25	-	-
M-18	08/23/2006	10:30	17.53	10.37	-	7.38	-	-	258	315	730	< 4	5,620	3,580	426	-	9.7	< 0.05	6.8	25	15.1	18.4	2,790	11,800	18	1,000	0.20	-
M-18	12/06/2006	12:25	16.80	9.21	0.93	6.96	-	-	141	172	435	< 4	5,470	2,810	418	-	29.1	< 0.05	7.1	28	5.9	8	2,740	10,300	17.4	621	< 0.1	-
M-18	04/22/2009	15:00	16.92	12.70	0.75	7.22	-	-	276	336	586	< 4	4,960	[2] 2,960	362	-	5.7	< 0.05	7.0	23	13.8	[3] 16.0	[3] 2,540	[3] 10,100	16.9	1,060	[3] 0.10	-
M-18	10/06/2009	16:35	17.49	10.40	0.17	7.16			246	300	670	< 4	5,660	3,220	377	-	2.4	0.07	7.0	22	17.3	20	2,540	9,750	16.8	877	0.10	-
M-18	04/19/2010	17:40	16.06	10.48	0.19	7.59	-	-	245	299	636	[3] < 4	5,920	[3] 3,080	361	-	2.1	< 0.01	7.0	21	17.9	[3] 19	[3] 2,480	[3] 10,400	16.6	986	[3] 0.10	-
M-18	09/20/2010	16:45	20.63	9.77	0.52	7.59	-	-	7	8	427	< 4	5,300	[3] 2,520	352	-	3.1	[3] 0.04	6.2	23	0.6	[3] 0.4	[3] 2,650	[3] 9,370	15.6	643	[3] < 0.1	-
M-18	05/07/2011	9:30	16.18	9.76	0.28	8.66	-	-	152	185	494	< 4	5,410	2,660	346	-	2.5	0.02	6.8	22	11.7	13.1	2,500	10,200	14.6	1,210	0.10	-
M-18	09/20/2011	17:00	15.80	9.90	0.47	7.33	10,270	-	-	-	-	-	5,210	[3] -	-	-	-	-	-	-	-	-	-	9,710	-	-	-	-
M-27 (Reddoor)	08/16/2001	14:35	13.5	11.30	-	9.30	-	-	14	17	687	< 1	5,280	3,940	540	-	1.8	< 0.05	8.8	19	< 1	-	1,640	10,400	13.1	160	-	-
M-27	08/16/2001	14:45	13.5	11.30	-	9.30	-	-	12	15	681	< 1	5,380	3,920	538	-	4.0	< 0.05	7.7	19	< 1	-	1,610	10,900	13.2	156	-	-
M-27	11/08/2001	8:50	11.4	10.00	-	8.30	-	-	4	5	710	< 1	5,650	4,050	553	-	4.3	< 0.05	6.7	23	-	< 3	1,670	9,920	14.2	433	-	-
M-27	02/20/2002	15:42	10.9	10.60	-	7.88	-	-	389	475	917	< 4	5,710	4,450	524	-	2.7	< 0.05	6.7	42	17	-	1,700	10,500	16.6	814	-	-
M-27	05/21/2002	15:05	17.2	13.10	-	7.28	-	-	211	258	839	< 4	7,110	4,130	494	-	2.7	< 0.05	6.9	20	20	-	1,620	12,000	16.8	1,160	0.15	-
M-27	08/20/2002	17:45	14.9	12.80	-	8.10	-	-	4	5	707	< 4	5,750	3,740	479	-	4.2	< 0.05	5.7	19	< 2	< 2	1,560	12,200	16	664	< 0.1	-
M-27	11/06/2002	9:00	16.4	11.60	-	8.55	-	-	< 4	4	732	< 4	5,100	3,990	526	-	2.6	< 0.05	6.0	23	< 2	< 2	1,730	10,500	17	619	< 0.1	-
M-27	03/05/2003	13:20	14.9	10.30	-	7.78	-	-	14	17	790	< 4	5,640	4,230	547	-	2.6	< 0.05	6.5	24	2	< 2	1,830	10,300	16.7	649	< 0.1	-
M-27	05/28/2003	10:30	14.4	11.60	-	7.96	-	-	5	6	771	< 4	5,590	4,250	565	-	2.6	< 0.05	5.9	25	< 2	< 2	1,730	10,300	15.6	525	< 0.1	-
M-27	08/13/2003	11:10	15.6	13.50	-	8.02	-	-	11	14	746	< 1	6,460	4,070	536	-	3.8	< 0.05	6.1	25	< 2	2	1,690	11,000	13.3	481	< 0.1	-
M-27	11/06/2003	10:00	16.28	8.70	-	8.01	-	-	5	6	732	< 4	6,390	4,070	545	-	5.6	< 0.05	6.5	27	< 2	< 4	1,800	10,300	14.9	418	< 0.1	-
M-27	06/08/2004	15:15	-	[11] 12.70	-	7.91	-	-	30	36	725	< 4	5,970	4,050	544	-	7.2	< 0.05	6.7	24	2.7	2.7	1,890	11,600	14.4	564	0.11	-
M-27	09/15/2004	12:25	16.4	14.90	-	7.16	-	-	214	261	1,000	< 4	5,920	[3] 4,870	576	-	3.0	< 0.05	6.7	24	17.8	[3] 19.0	[3] 1,870	[3] 13,900	17.5	919	[3] 0.14	-
M-27	11/18/2004	15:35	16.7	12.30	-	7.19	-	-	< 4	< 4	812	< 4	6,050	4,380	571	-	3.0	< 0.05	6.2	24	3.1	3.3	2,090	11,700	17.5	981	< 0.1	-
M-27	03/01/2005	12:05	18.1	13.40	-	6.81	-	-	< 4	< 4	767	< 4	5,980	4,240	565	-	2.7	< 0.05	5.8	30	3	2	2,100	11,700	17	835	< 0.1	-
M-27	05/24/2005	11:20	17.5	13.10	-	7.00	-	-	< 4	< 4	797	< 4	5,790	4,160	528	-	3.8	< 0.05	5.8	19	< 0.4	1.9	2,310	11,300	16.6	737	< 0.1	-
M-27	08/16/2005	9:30	17.8	15.70	-	6.75	-	-	< 4	< 4	776	< 4	5,790	4,210	553	-	2.8	< 0.05	5.7	18	1	< 0.9	1,980	12,200	17.4	801	< 0.1	-
M-27	11/15/2005	14:28	12.68	9.80	-	6.42	-	-	< 4	< 4	758	< 4	5,270	4,050	525	-	3.4	< 0.05	5.8	21	1.1	1.1	2,150	10,000	15.6	721	< 0.1	-
M-27	02/07/2006	13:10	13.9	9.90	-	7.19	-	-	< 4	< 4	800	< 4	5,250	4,060	500	-	3.4	< 0.05	6.2	26	5.6	6.3	2,120	9,820	15.9	712	< 0.1	-
M-27	05/23/2006	14:00	16.5	16.60	-	7.65	-	-	< 4	< 4	865	< 4	6,520	4,670	608	-	2.6	< 0.05	5.5	27	1.8	2	2,400	11,200	17.9	853	< 0.1	-
M-27	08/22/2006	14:30	18.35	9.83	0.56	7.33	-	-	< 4	< 4	884	< 4	6,040	4,600	581	-	3.0	< 0.05	6.2	26	3.5	6.9	2,420	12,400	18.3	793	< 0.1	-
M-27	12/06/2006	13:40	18.13	9.44	0.63	7.09	-	-	< 4	< 4	844	< 4	6,170	4,500	582	-	3.2	< 0.05	5.3	27	1.2	< 0.9	2,400	11,600	18.7	868	< 0.1	-
M-27	03/14/2007	17:30	16.59	9.79	0.51	6.88	-	-	< 4	< 4	805	< 4	6,200	4,330	564	-	2.8	< 0.05	4.4	29	38	-	2,330	12,300	18.5	806	< 0.1	-
M-27	10/04/2007	12:30	17.5	11.00	-	7.10	-	-	33	40	912	[3] < 4	6,520	4,570	557	[3] -	3.3	< 0.05	6.6	23	12	[3] 13	[3] 2,260	[3] 13,100	19.8	1,070	[3] < 0.1	-
M-27	03/27/2008	16:00	18.00	8.22	0.45	7.66	-	-	NA	[ALK] NA	779	[3] NA	6,140	4,110	526	[3] -	3.1	< 0.05	5.6	19	[3] < 2	[3] < 0.9	[3] 2,210	[3] 11,000	18.1	1,340	[3] < 0.1	-
M-27	10/24/2008	13:30	18.011	9.40	0.35	6.67	-	-	33	41	858	< 4	6,170	4,400	550	-	3.4	< 0.05	6.2	25	3	3.3	2,480	11,600	18.4	1,010	< 0.1	-
M-27	04/22/2009	9:00	17.14	9.72	0.10	7.70	-	-	48	59	765	< 4	5,840	[3] 3,920	488	-	3.1	< 0.05	6.3	23	3.7	[3] 5.0	[3] 2,280	[3] 12,300	18.6	975	< 0.1	-
M-27	10/05/2009	17:20	18.36	9.84	0.30	7.24	-	-	< 4	< 4	737	< 4	6,340	3,910	504	-	3.2	< 0.01	5.8	23	1.9	< 4	2,330	11,100	17.7	651	< 0.1	-
M-27	04/16/2010	17:35	16.77	10.21	0.31	7.69	-	-	< 4	< 4	553	[3] < 4	6,280	[3] 2,950	382	-	< 0.05	< 0.01	5.5	25	< 0.9	[3] < 20	[3] 2,430	[3] 10,400	14.9	681	[3] < 0.1	-
M-27	09/21/2010	15:00	16.55	9.70	0.47	7.73	-	-	< 4	< 4	716	< 4	6,310	[3] 3,760	479	-	3.2	[3] < 0.01	5.3	25	< 0.3	[3] < 0.4	[3] 2,570	[3] 14,000	17.4	715	[3] < 0.1	-
M-27	05/07/2011	10:15	16.67	9.66	0.93	6.36	-	-	67	82	786	< 4	6,450	3,970	487	-	3.0	< 0.01	6.2	24	3.9	5.3	2,420	12,400	17.1	1,100	< 0.1	-
M-27	09/21/2011	9:14	17.74	9.49	1.46	6.75	11,530	-	-	-	-	-	6,250	[2] -	-	-	-	-	-	-	-	-	-	12,300	-	-	-	-
M-27	05/16/2012	17:35	18.633	8.48	0.27	6.42	12,060	-	-	-	-	-	6,760	-	-	-	-	-	-	-	-	-	-	11,000	-	-	-	-
M-27	10/12/2012	9:17	18.52	9.51	0.75	7.75	12,053	-	-	-	-	-	7,100	[3] -	-	-	-	-	-	-	-	-	-	11,700	-	-	-	-
M-27	05/11/2013	10:27	18.34	9.60	0.08	8.10	11,920	-	[11] -	-	-	-	5,670	[3] -	-	-	-	-	-	-	-	-	-	10,800	-	-	-	-
M-27	09/27/2013	9:20	18.20	10.29	0.06	7.79	11,567	-391.6	-	-	-	-	6,380	[3] -	-	-	-	-	-	-	-	-	-	11,500	-	-	-	-
M-28 (Lockman)	06/01/2000	12:00	60.5	12.00	-	7.00		19.5	600	732	1,530	< 1	25,800	6,920	749	-	-	20.9	7.1	62	-	-	14,200	44,700	58.9	1,910	-	-
M-28	08/09/2001	12:15	57.7	11.50	-	6.90	-	-	676	825	1,210	< 1	23,800	5,600	628	-	4.0	27.9	6.9	57	17.3	-	11,300	40,500	53.5	1,880	-	-
M-28	08/16/2001	17:00	54.9	11.10	-	7.10	-	-	616	751	1,340	< 1	22,600	6,130	677	-	5.4	24.6	7.0	62	19.3	-	12,800	41,000	48.8	2,260	-	-
M-28	02/21/2002	8:40	59.3	10.20	-	6.63	-	-	633	772	1,250	< 4	25,900	5,620	607	-	6.9	15	7.0	77	17	-	13,300	43,800	47.4	1,400	-	-
M-28	05/23/2002	9:30	66.1	12.00	-	5.20	-	-	598	730	1,220	< 4	31,000	5,080	491	-	8.8	8.35	6.8	87	20	-	15,600	50,700	57.7	1,920	0.13	-
M-28	08/21/2002	10:00	61.1	12.60	-	6.50	-	-	609	742	1,240	< 4	25,500	5,620	614	-	8.0	12.9	6.8	51	18	18	9,540	45,900	51.8	1,700	0.15	-
M-28	11/06/2002	11:20	62.6	11.30	-	6.90	-	-	612	746	1,210	< 4	22,400	5,330	562	-	6.7	17	6.9	71	< 20	< 10	12,600	43,100	44	1,840	0.15	-
M-28	03/05/2003	15:30	54.6	10.70	-	6.80	-	-	606	739	1,190	< 4	22,400	5,140	528	-	6.6	19.7	6.8	62	18	22	11,200	40,500	32.9	2,330	0.20	-
M-28	05/13/2003	16:45	52.4	12.00	-	7.27	-	-	603	736	1,180	< 4	24,300	5,220	551	-	6.7	16.9	6.7	93	16	19	13,800	43,800	65	1,700	0.16	-
M-28	08/13/2003	15:35	55.2	13.00	-	7.61	-	-	627	765	1,130	< 1	21,900	5,150	564	-	6.0	22.7	6.7	113	21	22	11,400	38,600	51.5	1,220	0.20	-
M-28	11/05/2003	10:30	51.8	11.50	-	5.15	-	-	635	775	978	< 4	23,000	4,440	484	-	6.5	23.7	6.8	76	17	< 20	10,300	38,700	32.8	1,370	0.26	-
M-28	03/16/2004	17:34	48.8	8.80	-	6.30	-	-	695	848	1,030	< 1	13,800	5,240	645	-	3.3	37.6	6.9	61	24	24	7,520	25,800	37.5	1,590	0.15	-
M-28	06/08/2004	17:18	-	[11] 11.90	-	7.02	-	-	667	814	1,030	< 4	19,200	4,850	551	-	5.6	23.3	6.9	77	20	21	9,940	16,900	34.3	2,020	0.21	-
M-28	09/15/2004	14:00	49.9	13.70	-	6.66	-	-	669	816	1,040	[3] < 4	20,500	[3] 4,860	549	[3] -	6.7	23.3	7.0	94	[3] 19	[3] 25	[3] 10,800	[3] 35,600	52.1	1,820	[3] 0.28	-
M-28	11/19/2004	8:36	51.3	10.80	-	7.06	-	-	662	808	1,070	< 4	16,000	5,040	576	-	4.5	27.2	6.8	82	23	24	9,280	32,000	47.8	1,730	0.18	-
M-28	03/01/2005	15:45	55.1	13.00	-	6.63	-	-	703	857	1,040	< 4	17,600	4,980	579	-	5.3	22.5	6.9	94	21	23	10,900	32,800	47.9	1,700	0.18	-
M-28	05/24/2005	13:10	-	[11] 11.90	-	6.95	-	-	605	738	936	< 4	14,900	4,610	552	-	4.6	27.9	7.0	68	16	22	8,890	28,400	42	1,940	0.19	-
M-28	08/16/2005	13:15	48.5	15.80	-	6.74	-	-	703	858	899	< 4	17,700	4,320	504	-	5.3	22.3	7.3	62	22	21	9,980	30,200	45.8	1,570	0.23	-
M-28	11/15/2005	16:35	41.3	10.30	-	6.48	-	-	630	769	990	< 4	16,200	4,870	584	-	5.1	20.1	7.0	79	23	22	9,880	26,600	42.8	1,740	0.18	-
M-28	02/07/2006	16:30	45.2	9.80	-	7.01	-	-	679	829	972	< 4	16,000	4,630	534	-	5.1	19.8	6.9	73	21	19	9,450	28,600	44.6	1,730	0.17	-
M-28	05/23/2006	16:20	39.1	11.75	-	6.69	-	-	656	800	954	< 4	16,300	4,530	522	-	4.5	19.4	7.5	65	22	22	9,010	24,500	42.7	1,850	0.17	-
M-28	08/22/2006	16:45	41	10.50	0.44	7.30	-	-	627	765	872	< 4	14,200	4,260	505	-	4.1	9.84	6.8	56	23	22	8,080	25,600	40.4	1,780	0.20	-
M-28	12/06/2006	14:40	37.18	9.87	0.35	6.80	-	-	634	774	877	< 4	14,300	4,260	503	-	4.2	22.6	6.9	67	23	53	8,480	26,600	42	1,800	0.20	-
M-28	03/15/2007	10:15	29.08	9.86	0.11	6.48	-	-	662	808	816	< 4	11,200	4,290	548	-	3.5	23.6	6.9	57	169	-	6,280	21,200	32.5	1,770	0.18	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
M-28	10/03/2007	16:40	30.72	10.30	0.58	6.51	-	-	647	789	733	< 4	10,900	3,800	479	-	3.0	18	6.8	47	22	22	5,820	20,700	34.2	1,830	0.2	-
M-28	03/27/2008	9:50	32.90	14.50	-	6.92	-	-	673	821	775	< 4	9,600	4,120	531	-	3.2	14.5	6.9	45	26	70	5,900	18,400	29.4	1,730	0.20	-
M-28	10/26/2008	14:30	24.43	10.16	0.14	6.88	-	-	688	839	709	< 4	7,940	3,890	515	-	2.8	13.7	7.0	30	22	31	4,490	16,200	25.1	2,000	0.20	-
M-28	04/15/2009	11:20	29.37	11.14	0.27	6.72	-	-	699	853	587	< 4	6,210	3,330	452	-	1.4	10.90	7.1	31	22.5	19.0	3,620	12,900	21.0	1,500	0.20	-
M-28 [14]	10/01/2009	15:45	20	10.00	0.56	6.66	-	-	721	880	544	< 4	6,180	3,010	402	-	1.6	6	6.8	31	22.4	27.1	3,360	11,300	20.3	1,450	0.20	-
M-28 [14]	04/15/2010	11:30	16.55	9.97	1.31	6.92	-	-	768	937	371	< 4	4,970	2,050	272	-	1.1	1.44	7.1	27	22.8	24	3,240	10,600	16	1,730	0.20	-
M-28 [14]	09/16/2010	11:45	13.4	10.00	0.72	6.86	-	-	816	996	271	< 4	3,170	1,440	186	-	0.8	0.19	7.2	22	21.2	22.7	2,690	8,310	12.8	1,600	0.30	-
M-28 [14]	05/05/2011	17:45	10.47	9.91	0.32	6.89	-	-	846	1,030	176	< 4	1,930	1,030	144	-	0.5	1.88	7.4	20	24	23.8	2,010	6,700	9.76	1,950	0.30	-
M-28 [14]	09/19/2011	11:36	9.098	9.79	0.34	7.03	5,907	-	-	-	-	-	1,610	-	-	-	-	-	-	-	-	-	-	5,990	-	-	-	-
M-28 [14]	05/17/2012	14:20	8.682	9.93	0.94	6.93	5,660	-	-	-	-	-	1,560	-	-	-	-	-	-	-	-	-	-	5,250	-	-	-	-
M-28 [14]	10/11/2012	13:57	8.04	9.79	0.65	6.83	5,238	-	-	-	-	-	1,440	-	-	-	-	-	-	-	-	-	-	6,650	-	-	-	-
M-28 Dup [14]	10/11/2012	13:57	-	-	-	-	-	-	-	-	-	-	1,330	-	-	-	-	-	-	-	-	-	-	6,120	-	-	-	-
M-28 [14]	05/07/2013	16:04	7.122	9.90	0.37	6.89	4,628	144.8	-	-	-	-	933	-	-	-	-	-	-	-	-	-	-	5,370	-	-	-	-
M-28 [14]	09/25/2013	14:42	6.638	10.00	0.21	6.73	4,389	38.3	-	-	-	-	750	-	-	-	-	-	-	-	-	-	-	4,920	-	-	-	-
M-30 (Trottier)	06/01/2000	12:30	2.6	9.80	-	9.20		-115.0	1020	1,240	126	< 1	36	801	118	-	-	< 0.05	8.0	7	-	-	325	1,740	2.38	501	-	5.63
M-30	02/22/2002	13:00	2.9	5.60	-	7.64	-	-	905	1,100	113	< 4	43	735	110	-	4.0	< 0.05	7.5	7	27.5	-	325	1,790	2.56	549	-	-
M-30	05/22/2002	17:10	2.58	7.00	-	7.53	-	-	916	1,120	111	< 1	34	700	103	-	5.6	< 0.05	7.6	6	31.5	-	291	1,730	2.6	539	0.29	-
M-30	08/21/2002	10:40	2.1	14.20	-	7.30	-	-	931	1,140	114	< 4	42	733	109	-	5.8	< 0.05	7.7	6	26.7	23.5	257	1,650	2.48	528	0.33	-
M-30	11/19/2004	8:15	2.7	10.50	-	7.71	-	-	818	998	121	< 1	46	735	105	-	4.7	< 0.05	7.4	8	27.7	28.6	254	1,550	2.29	459	0.38	-
M-30	03/02/2005	17:50	- [11]	- [11]	- [11]	- [11]	-	-	995	1,210	129	< 4	58	825	122	-	4.2	< 0.05	7.5	8	28.3	28.4	331	1,770	2.53	537	0.36	-
M-31 (Trottier)	06/01/2000	13:40	87.2	11.00	-	7.60		-17.0	461	562	1,760	< 1	36,000	7,610	783	-	-	0.17	7.1	122	-	-	20,200	60,800	80.5	1,690	-	9.5
M-31	08/09/2001	11:05	88.5	10.70	-	6.90	-	-	515	628	1,540	< 1	35,900	6,530	649	-	6.6	< 0.05	6.9	150	15.6	-	19,800	63,800	74.2	1,220	-	-
M-31	08/16/2001	17:30	84.3	11.20	-	7.00	-	-	516	630	1,640	< 1	37,200	6,820	659	-	6.9	< 0.05	6.9	150	15.8	-	21,900	63,300	68.3	2,120	-	-
M-31	11/08/2001	16:00	51.4	11.70	-	6.80	-	-	6 [13]	8 [12]	1,170	< 1	28,300	7,350	1,070	-	11.3	0.06	6.0	110	-	< 5	15,700	50,200	39.8	840	-	-
M-31	02/21/2002	9:45	81.4	10.30	-	6.58	-	-	464	566	1,570	< 4	38,600	6,510	630	-	7.5	< 0.05	7.0	207	17	-	20,800	63,000	58.4	1,690	-	-
M-31	05/22/2002	15:45	94.4	11.80	-	6.75	-	-	513	626	1,440	< 4	39,700	5,950	571	-	7.7	< 0.05	6.8	162	24	-	20,000	63,700	64.7	2,210	0.12	-
M-31	08/21/2002	10:45	83.5	12.10	-	6.50	-	-	504	615	1,530	< 4	39,200	6,390	626	-	8.4	< 0.05	6.8	136	16	14	16,600	67,100	67.5	1,780	0.12	-
M-31	11/06/2002	10:35	89.2	10.80	-	6.84	-	-	510	622	1,520	< 4	33,600	6,280	601	-	8.1	< 0.05	6.8	177	17	< 10	19,100	62,800	55	1,650	0.13	-
M-31	03/05/2003	14:10	81.9	10.20	-	6.72	-	-	353	430	1,540	< 4	39,200	6,210	574	-	7.6	< 0.05	6.7	169	16	15	19,300	62,600	43.2	1,740	0.10	-
M-31	05/13/2003	16:00	79.1	11.30	-	7.21	-	-	505	616	1,500	< 4	36,100	6,180	588	-	8.1	< 0.05	6.7	238	13	15	22,200	63,500	85	1,530	0.13	-
M-31	08/13/2003	14:40	88.1	12.70	-	7.49	-	-	503	613	1,480	< 1	37,300	6,070	577	-	8.0	< 0.05	6.6	229	16	18	20,400	63,900	81.9	1,050	0.13	-
M-31	11/05/2003	11:35	83	11.10	-	-	-	-	502	612	1,020	< 4	37,700	4,400	450	-	8.4	< 0.05	6.7	206	16	< 20	16,900	62,100	42.1	1,140	0.15	-
M-31	03/16/2004	16:00	68.8	9.30	-	6.10	-	-	503	614	1,570	< 1	42,000	6,110	604	-	9.5	< 0.05	6.7	214	16.8	17.3	20,200	62,900	87.1	1,330	0.11	-
M-31	06/08/2004	16:40	- [11]	11.40	-	6.94	-	-	506	618	1,450	< 4	39,400	5,930	559	-	9.2	< 0.05	6.8	182	15	16	18,800	62,100	89.1	1,700	0.17	-
M-31	09/15/2004	15:00	88.5	14.50	-	6.58	-	-	518	632	1,510	< 4	39,500	6,150	577	-	9.9	< 0.05	6.9	227	17	17	20,900	64,800	90.5	1,560	0.20	-
M-31	11/18/2004	17:00	86.1	10.70	-	6.84	-	-	503	613	1,590	< 4	37,000	6,390	590	-	8.8	< 0.05	6.7	274	18	18	20,700	62,700	91.4	1,510	0.14	-
M-31	03/01/2005	13:45	98	12.50	-	6.48	-	-	550	671	1,560	< 4	40,300	6,380	603	-	8.8	< 0.05	6.8	264	21	31	23,000	62,800	89.9	1,560	0.13	-
M-31	05/24/2005	15:05	- [11]	11.00	-	6.82	-	-	465	568	1,420	< 4	37,700	5,770	540	-	9.1	0.08	6.7	251	7	14	22,800	61,800	89.6	1,620	0.17	-
M-31	08/16/2005	11:30	95.5	17.50	-	6.49	-	-	550	671	1,530	< 4	35,300	6,260	592	-	10.1	< 0.05	6.9	185	17	20	20,700	61,400	90	1,310	0.14	-
M-31	11/15/2005	15:30	89	9.10	-	6.40	-	-	461	562	1,630	< 4	39,700	6,700	637	-	9.1	< 0.05	7.0	218	28	44	23,600	57,700	91.9	12	0.12	-
M-31	02/07/2006	14:00	93.5	8.90	-	6.92	-	-	528	645	1,560	< 4	37,300	6,180	558	-	10.0	< 0.05	7.1	262	17	17	22,400	61,200	90.4	1,460	0.11	-
M-31	05/23/2006	17:20	86.02	11.25	-	6.53	-	-	510	622	1,560	< 4	39,700	6,040	523	-	10.1	< 0.05	7.4	305	19	22	22,500	57,200	91.3	1,510	0.12	-
M-31	08/23/2006	13:30	93.6	10.30	-	6.70	-	-	483	589	1,550	< 4	37,600	6,090	542	-	4.3	< 0.05	6.6	220	23	23	23,000	59,800	94.3	1,500	0.10	-
M-31	12/06/2006	15:45	92.20	9.18	0.25	6.44	-	-	499	609	1,450	< 4	39,400	5,780	527	-	11.5	< 0.05	6.8	239	19	19	22,700	62,900	95.2	1,550	0.10	-
M-31	03/15/2007	11:30	88.86	9.40	0.06	6.31	-	-	497	607	1,570	< 4	40,800	6,380	595	-	11.9	< 0.05	6.7	259	58	-	24,100	64,000	93.6	1,490	0.12	-
M-31	10/04/2007	14:30	89.07	9.92	0.3	6.77	-	-	498	607	1,550	< 4	40,800	6,160	558	-	13.2	< 0.05	6.6	239	21	19	22,300	63,300	99.1	1,620	0.1	-
M-31	03/27/2008	10:30	89.20	10.50	-	6.83	-	-	399	487	1,720	< 4	41,200	6,850	620	-	10.9	< 0.05	6.6	276	29	27	25,100	62,000	94.7	1,420	0.10	-
M-31	10/26/2008	17:20	89.47	9.66	0.11	6.83	-	-	494	603	1,550	< 4	40,800	6,200	566	-	13.2	< 0.05	6.8	236	13	29	22,300	61,200	92.1	1,690	0.10	-
M-31	04/15/2009	16:15	89.91	9.56	0.15	6.81	-	-	491	599	1,350	< 4	37,400	5,460	506	-	11.2	< 0.05	6.8	246	9.0	< 20	21,400	53,800	90.6	1,470	0.10	-
M-31	10/01/2009	16:20	88.8	9.63	2.27	6.42			479	584	1,500	< 4	41,600	5,940	536	-	11.1	0.04	7.0	238	15	31	21,500	58,900	88.2	1,060	0.10	-
M-31	04/15/2010	13:10	90.30	9.71	-	6.65	-	-	482	588	1,310	< 4	45,300	5,270	487	-	11.3	0.03	6.8	252	15	15	22,000	59,900	84.4	1,260	0.10	-
M-31	09/16/2010	11:10	88.74	9.84	0.82	6.60	-	-	508	619	1,310	< 4	41,600	5,290	494	-	12.0	< 1.0	6.9	252	15	16	22,200	58,800	83.3	1,350	0.10	-
M-31	05/07/2011	12:30	85.82	9.13	0.32	6.41	-	-	541	660	1,270	< 4	35,800	5,070	460	-	10.4	0.26	6.8	237	18	21	19,400	60,300	76.7	1,550	0.10	-
M-31	09/20/2011	13:47	77.60	9.31	0.72	6.57	50,440	-	-	-	-	-	34,500	-	-	-	-	-	-	-	-	-	-	52,600	-	-	-	-
M-31	05/18/2012	11:38	72.60	9.55	0.60	6.58	47,180	-	-	-	-	-	31,300	-	-	-	-	-	-	-	-	-	-	42,100	-	-	-	-
M-31	10/25/2012	13:10	71.90	9.29	0.27	6.41	46,733	-42.2	-	-	-	-	31,100	-	-	-	-	-	-	-	-	-	-	48,400	-	-	-	-
M-31	05/08/2013	10:30	68.22	9.42	0.33	6.46	44,330	- [11]	-	-	-	-	26,600	-	-	-	-	-	-	-	-	-	-	46,100	-	-	-	-
M-31	Well plugged and abandoned May 2013, replaced with M-31-13																											
M-31-13	05/11/2013	15:30	27.64	9.94	3.81	6.85	17,950	-17.73	-	-	-	-	9,510	-	-	-	-	-	-	-	-	-	-	30,500	-	-	-	-
M-31-13 Dup	05/11/2013	15:30	-	-	-	-	-	-	-	-	-	-	9,790	-	-	-	-	-	-	-	-	-	-	30,600	-	-	-	-
M-31-13	07/03/2013	18:20	32.24	9.57	0.30	6.69	21,070	-163.5	722	942	505	< 4	10,700	2,290	249	0.44	3.28	15.0	7.4	85	19.5	21	6,880	21,100	31.5	2,140	0.2	0.5
M-31-13	09/26/2013	16:12	34.86	9.45	0.09	6.54	22,650	18.0	-	-	-	-	11,800	-	-	-	-	-	-	-	-	-	-	30,700	-	-	-	-
M-36 (D. Grainger)	09/05/2001	15:55	3.8	10.90	-	7.60	-	-	661	807	206	< 1	259	1,160	156	-	1.1	< 0.05	6.6	7	21.3	-	458	2,920	3.49	1,230	-	-
M-36	11/09/2001	11:05	2.7	9.60	-	7.40	-	-	649	792	215	< 1	313	1,210	163	-	1.0	0.05	7.2	8	-	27.9	478	2,960	3.77	1,220	-	-
M-38	09/05/2001	16:25	3.5	13.50	-	7.80	-	-	654	798	212	< 1	174	1,080	132	-	1.0	< 0.05	6.6	7	21.3	-	434	2,750	3.27	1,230	-	-
M-38	11/09/2001	11:40	2.4	10.20	-	7.60	-	-	648	791	208	< 1	183	1,080	135	-	1.0	0.05	7.3	8	-	27.4	436	2,690	3.52	1,240	-	-
M-39	11/07/2001	15:45	-	9.40	-	-	-	-	401	413	10	38	34	1,020	241	-	8.8	< 0.05	8.9	8	-	1.7	269	2,150	2.64	1,260	-	-
M-60 (Whitmer)	05/31/2000	0:00	3.26	10.10	-	9.20		-105.0	352	429	133	< 1	794	695	88	-	-	< 0.05	8.2	8	-	-	432	1,970	3.22	279	-	4.82
M-60	08/10/2001	10:00	3.9	10.80	-	7.70	-	-	366	447	168	< 1	1,020	893	115	-	0.6	< 0.05	7.4	10	14.2	-	524	2,520	3.89	287	-	-
M-60	08/22/2001	15:30	3.4	11.10	-	-	-	-	360	439	155	< 1	1,020	820	105	-	0.7	< 0.05	7.5	8	13.5	-	445	2,470	3.81	270	-	-
M-60	11/09/2001	10:20	3.5	9.70	-	7.60	-	-	343	418	168	< 1	1,060	879	111	-	0.8	< 0.05	7.5	9	-	16.4	484	2,410	4.04	285	-	-
M-60	02/22/2002	14:45	4.7	10.70	-	7.76	-	-	353	430	165	< 4	1,110	865	110	-	0.8	< 0.05	7.6	8	15	-	472	2,530	4.17	288	-	-
M-60	05/22/2002	16:35	4.42	10.20	-	7.63	-	-	339	414	164	< 4	1,290	870	112	-	0.7	< 0.05	7.6	9	16.5	-	457	2,650	4.33	222	0.21	-
M-60	08/21/2002	9:35	3.8	10.80	-	7.50	-	-	331	404	187	< 4	1,240	918	110	-	0.8	< 0.05	7.6	9	12.3	10.2	512	2,710	4.43	296	0.21	-
M-60	11/05/2002	14:20	4.3	10.30	-	7.66	-	-	334	407	197	< 4	1,250	1,020	129	-	0.9	< 0.05	7.5	10	13.4	16.9	509	2,670	4.65	309	0.23	-
M-60	03/04/2003	14:10	4.2	9.90	-	8.10	-	-	318	388	215	< 4	1,310	1,020	151	-	0.8	< 0.05	7.3	10	13.6	16	619	2,720	4.98	320	0.20	-
M-60	05/13/2003	17:00	5	11.00	-	7.48	-	-	329	402	216	< 4	1,330	1,130	144	-	0.9	< 0.05	7.4	12	14	15	531	2,760	4.54	306	0.23	-
M-60	08/14/2003	12:10	4	11.20	-	7.45	-	-	326	398	221	< 1	1,350	1,130	141	-	0.7	< 0.05	7.5	11	13.8	16.3	536	2,950	4.6	267	0.25	-
M-60	11/04/2003	16:00	4.6	11.00	-	7.27	-	-	323	395	224	< 4	1,490	1,170	148	-	1.0	< 0.05	7.5	12	14.4	16.2	548	2,940	4.67	248	0.23	-
M-60	03/18/2004	13:05	6.7	14.60	-	7.95	-	-	326	398	246	< 1	1,530	1,280	161	-	1.0	< 0.05	7.4	11	15.4	15.7	547	3,130	4.86	267	0.21	-
M-60	06/09/2004	8:45	5.2	10.80	-	7.74	-	-	327	399	239	< 4	1,570	1,240	156	-	1.0	< 0.05	7.5	13	13.8	16.3	634	3,500	5.45	359	0.25	-
M-60	09/16/2004	11:20	4.6	12.50	-	7.92	-	-	330	403	262	< 4	1,510	1,350	168	-	0.9	< 0.05	7.6	12	14.9	16.5	593	3,520	5.5	320	0.22	-
M-60	11/18/2004	16:00	5.9	10.60	-	7.35	-	-	297	362	269	< 1	1,610	1,400	177	-	1.0	< 0.05	7.3	11	15.4	16.5	608	3,420	5.69	327	0.24	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
M-60	03/02/2005	16:44	5.38	9.20	-	7.54	-	-	328	400	277	< 4	1,670	1,470	188	-	1.1	0.11	7.5	13	15.4	15.9	676	3,470	5.73	324	0.25	-
M-60	08/16/2005	15:00	5.8	15.70	-	7.40	-	-	322	393	283	< 4	1,610	1,500	192	-	1.1	< 0.05	7.7	11	15.2	14.6	636	3,800	5.84	329	0.22	-
M-60	11/17/2005	10:25	6.5	10.50	-	7.48	-	-	289	352	315	< 4	1,790	1,670	214	-	1.1	< 0.05	7.5	11	15.8	16.3	687	3,660	6	323	0.21	-
M-60	02/09/2006	11:15	6.2	9.80	-	8.10	-	-	316	386	278	< 4	1,690	1,440	182	-	1.2	< 0.05	7.4	15	15.4	17	650	3,460	6	379	0.21	-
M-60	05/25/2006	11:21	5	10.60	-	7.50	-	-	302	369	307	< 4	1,820	1,600	204	-	1.2	< 0.05	7.9	14	16	17.6	708	3,630	6.21	348	0.21	-
M-60	08/24/2006	11:45	5.500	10.10	0.21	7.52	-	-	284	346	316	< 4	1,810	1,630	204	-	1.2	< 0.05	7.2	14	16	17.1	687	4,240	6.6	342	0.20	-
M-60	12/07/2006	13:30	6.383	9.04	0.35	7.66	-	-	286	349	321	< 4	1,840	1,640	203	-	1.3	< 0.05	7.3	12	14.8	16.6	684	4,010	6.8	351	0.20	-
M-60	03/14/2007	16:55	6.232	9.34	0.14	7.53	-	-	284	347	339	< 4	1,930	1,770	225	-	1.3	< 0.05	7.4	13	19.7	-	732	4,300	6.86	340	0.20	-
M-60	10/05/2007	18:00	6.916	9.29	0.12	7.33	-	-	274	335	347	< 4	1,980	1,820	231	-	1.4	< 0.05	7.2	14	15.4	16.9	731	4,520	7.1	365	0.2	-
M-60	03/27/2008	11:10	7.208	9.64	0.30	7.61	-	-	284	346	367	< 4	2,100	1,930	246	-	1.3	< 0.05	7.2	13	15.5	16.9	743	4,320	7.2	344	0.20	-
M-60	10/27/2008	17:55	7.304	9.57	0.13	7.24	-	-	276	337	390	< 4	2,170	2,050	262	-	1.4	< 0.05	7.4	14	15.6	16.5	812	4,990	7.37	411	0.20	-
M-60	04/21/2009	19:00	7.940	9.71	0.11	7.38	-	-	269	328	368	< 4	2,180	1,930	246	-	1.4	< 0.05	7.1	15	12.4	16	750	4,110	7.63	394	0.20	-
M-60	10/01/2009	15:04	7.796	9.52	0.26	7.24			268	327	420	< 4	2,540	2,210	283	-	1.5	< 0.01	7.3	13	16.5	17.6	824	4,900	7.93	317	0.20	-
M-60	04/13/2010	12:05	7.923	9.56	0.35	7.17	-	-	262	320	432	< 4	2,720	2,260	287	-	1.4	< 0.01	7.2	16	15.4	16	838	5,300	8.01	340	0.20	-
M-60	09/22/2010	15:00	7.571	9.37	0.16	7.13	-	-	263	321	430	< 4	2,480	2,220	278	-	1.4	0.02	7.6	15	15.2	17.9	877	5,340	8.15	310	0.20	-
M-60	05/06/2011	16:18	8.488	10.06	0.84	7.08	-	-	278	339	448	< 4	2,740	2,320	293	-	1.3	0.01	7.1	17	17.5	17.3	907	5,550	8.2	448	0.20	-
M-60	09/19/2011	15:06	8.609	9.56	0.27	7.24	5,596	-	-	-	-	-	2,710	-	-	-	-	-	-	-	-	-	-	5,330	-	-	-	-
M-60	05/18/2012	11:15	9.161	8.36	0.21	6.97	5,955	-	-	-	-	-	2,860	-	-	-	-	-	-	-	-	-	-	4,600	-	-	-	-
M-60	05/18/2012	11:15	-	-	-	-	-	-	-	-	-	-	2,860	-	-	-	-	-	-	-	-	-	-	5,140	-	-	-	-
M-60	10/10/2012	17:15	11.76	9.35	0.23	7.30	7,642	-	-	-	-	-	2,930	-	-	-	-	-	-	-	-	-	-	6,080	-	-	-	-
M-60	10/11/2013	13:19	9.079	9.46	0.12	7.06	5,913	247.3	-	-	-	-	2,760	-	-	-	-	-	-	-	-	-	-	6,850	-	-	-	-
M-60	09/26/2013	12:30	9.506	9.66	0.13	7.14	6,179	-153.6	-	-	-	-	2,920	-	-	-	-	-	-	-	-	-	-	6,080	-	-	-	-
M-69	04/15/2009	14:17	1.8	5.86	1.39	7.36	-	-	420	512	96	< 4	61	402	40	-	0.4	8.36	7.6	109	14.2	13.5	170	1,190	1.78	386	0.50	-
M-80	04/18/2009	15:30	23.23	9.24	0.29	7.04	-	-	178	217	1,050	< 4	7,500	5,410	675	-	1.7	< 0.05	6.7	30	10.4	14.0	2,810	13,500	22.9	395	0.20	-
MOC-1B	03/14/2007	12:55	4.059	9.68	0.29	7.22	-	-	433	528	363	< 4	75	2,150	301	-	< 0.1	30.6	7.2	11	31.8	-	384	4,070	4.5	2,220	0.19	-
MOC-1B	10/03/2007	10:35	4.351	9.82	-	6.99			426	520	358	< 4	74	2,080	289	-	< 0.1	32.2	7.2	9	23.4	25.3	367	3,920	4.62	2,280	0.20	-
MOC-1B	03/25/2008	18:30	4.390	9.63	0.10	6.92	-	-	438	535	356	< 4	74	2,090	292	-	< 0.1	36.8	7.2	8	22.7	23	370	3,810	4.43	2,240	0.20	-
MOC-1B	10/23/2008	14:15	4.251	9.86	0.34	7.07	-	-	430	525	360	< 4	80	2,120	297	-	< 0.1	29.2	7.4	9	23.9	25.6	361	3,810	4.4	2,260	0.20	-
MOC-1B	04/21/2009	12:45	4.463	10.03	0.51	6.96	-	-	432	527	356	< 4	68	2,070	286	-	< 0.1	28.90	7.3	10	23.3	24.0	368	3,540	4.4	2,230	0.20	-
MOC-1B	10/03/2009	12:45	4.398	9.62	0.37	6.92			416	508	365	< 4	64	2,120	294	-	< 0.05	30.9	7.3	9	23.6	24	357	3,970	4.26	2,110	0.20	-
MOC-1B	04/13/2010	17:30	4.178	9.48	0.29	6.91	-	-	415	507	351	< 4	66	2,060	287	-	< 0.05	32.9	7.2	10	23.6	22	384	3,980	4.44	2,260	0.20	-
MOC-1B	09/16/2010	15:30	4.387	9.63	0.67	6.92	-	-	419	511	366	< 4	57	2,120	292	-	< 0.05	35.3	7.2	10	22.8	22.7	370	3,950	4.19	2,150	0.20	-
MOC-1B	05/04/2011	10:45	4.25	9.76	0.41	6.79	-	-	436	532	345	< 4	66	2,020	282	-	< 0.05	27.3	7.3	9	23	25.2	354	4,150	4.35	2,310	0.20	-
MOC-1B	09/20/2011	9:37	4.511	8.69	0.25	6.63	2,934	-	-	-	-	-	54	-	-	-	-	-	-	-	-	-	-	3,590	-	-	-	-
MOC-1B	05/16/2012	12:37	3.550	9.76	0.98	6.75	2,300	-	-	-	-	-	59	-	-	-	-	-	-	-	-	-	-	3,610	-	-	-	-
MOC-1B	10/11/2012	13:14	4.229	8.27	0.54	6.92	2,749	129.6	-	-	-	-	54	-	-	-	-	-	-	-	-	-	-	3,730	-	-	-	-
MOC-1B	05/07/2013	16:41	4.268	9.81	0.32	7.31	2,770	-158.7	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	3,930	-	-	-	-
MOC-1B	09/25/2013	17:33	3.855	9.79	0.46	7.00	2,506	-165.3	-	-	-	-	51	-	-	-	-	-	-	-	-	-	-	3,460	-	-	-	-
MOC-2	10/16/2006	17:30	19.00	9.50	-	6.80	-	-	290	354	1,130	< 4	6,850	5,170	570	-	4.1	< 0.05	6.6	28	21	59	2,850	14,500	21.0	1,720	0.20	-
MOC-2	03/13/2007	17:00	20.26	9.70	0.12	6.46	-	-	321	391	1,060	< 4	7,050	4,990	571	-	3.6	< 0.05	6.8	28	76.9	-	2,750	13,800	20.6	1,730	0.17	-
MOC-2	10/05/2007	14:30	20.96	9.69	0.27	6.85	-	-	270	330	1,060	< 4	7,110	4,950	556	-	4.0	< 0.05	6.8	25	20	26	2,840	14,600	21.2	1,540	0.2	-
MOC-2	03/26/2008	17:30	21.00	9.71	0.20	7.18	-	-	283	345	1,090	< 4	7,200	5,000	555	-	3.6	< 0.05	6.7	27	23	25	3,060	13,700	21.3	1,460	0.20	-
MOC-2	10/25/2008	13:07	22.59	9.69	0.47	6.69	-	-	304	371	1,040	< 4	6,880	4,830	542	-	3.8	< 0.05	6.8	23	20	27.6	2,910	13,000	20.9	1,670	0.20	-
MOC-2	04/21/2009	13:40	21.39	9.82	0.20	6.80	-	-	285	348	1,030	< 4	6,560	4,720	519	-	3.4	< 0.05	6.8	26	19.7	26.0	2,990	13,600	21.1	1,430	0.20	-
MOC-2	10/03/2009	14:55	21.68	10.18	0.22	6.75			289	352	992	< 4	6,990	4,540	502	-	3.6	< 0.01	6.7	24	21.8	27	2,860	13,300	20.8	1,170	0.20	-
MOC-2	04/16/2010	15:35	20.64	10.03	0.24	6.76	-	-	285	347	998	< 4	7,550	4,660	526	-	3.2	< 0.01	6.8	25	22	22	3,010	13,900	20.5	1,260	0.20	-
MOC-2	09/21/2010	14:21	20.62	9.67	0.22	6.84	-	-	279	341	989	< 4	7,030	4,480	488	-	3.7	< 0.01	7.4	26	22.1	25.3	3,100	15,100	20.0	1,140	0.20	-
MOC-2	05/06/2011	16:10	20.78	9.95	0.48	7.38	-	-	309	377	956	< 4	7,020	4,410	490	-	3.3	< 0.01	6.8	25	25.2	33	3,010	14,100	19	1,570	0.20	-
MOC-2	09/21/2011	10:11	20.25	9.57	1.24	6.78	13,170	-	-	-	-	-	6,810	-	-	-	-	-	-	-	-	-	-	13,300	-	-	-	-
MOC-2	05/18/2012	9:19	19.31	10.00	0.39	6.79	12,550	-	-	-	-	-	7,080	-	-	-	-	-	-	-	-	-	-	12,800	-	-	-	-
MOC-2	10/11/2012	11:22	19.65	10.05	0.32	6.80	12,777	-	-	-	-	-	7,140	-	-	-	-	-	-	-	-	-	-	12,500	-	-	-	-
MOC-2	05/10/2013	11:17	19.63	9.86	0.19	6.55	12,760	137.5	-	-	-	-	6,410	-	-	-	-	-	-	-	-	-	-	12,600	-	-	-	-
MOC-2 Dup	05/10/2013	11:17	-	-	-	-	-	-	-	-	-	-	6,380	-	-	-	-	-	-	-	-	-	-	12,500	-	-	-	-
MOC-2	09/28/2013	Abandoned - well damaged, dropped from monitoring network																										
MOC-3	10/17/2006	12:00	4.000	9.30	-	7.11	-	-	359	438	316	< 4	76	1,670	214	-	< 0.1	17.8	7.2	13	20.8	36.7	397	3,460	3.96	1,930	0.5	-
MOC-3	03/14/2007	11:50	3.601	9.69	0.37	7.19	-	-	360	439	318	< 4	74	1,690	218	-	< 0.1	13.4	7.3	12	43.1	-	400	3,500	4	1,890	0.47	-
MOC-3	10/02/2007	19:00	3.817	9.73	0.16	6.94	-	-	359	438	299	< 4	76	1,580	202	-	< 0.1	15.2	7.1	10	19.3	30.3	379	3,370	4.06	1,890	0.50	-
MOC-3	03/25/2008	16:50	3.887	9.90	0.22	6.92	-	-	364	444	314	< 4	73	1,670	216	-	< 0.1	17.9	7.3	11	19.4	20.7	385	3,260	3.91	1,890	0.50	-
MOC-3	10/23/2008	12:40	3.723	10.49	0.72	6.75	-	-	358	437	309	< 4	78	1,630	208	-	< 0.1	17.7	7.3	10	19.6	24.5	392	3,330	3.9	1,830	0.50	-
MOC-3	04/20/2009	19:05	3.938	10.00	0.25	7.00	-	-	360	439	306	< 4	70	1,600	204	-	< 0.1	14.20	7.3	11	19.2	20.0	368	3,140	3.9	1,900	0.50	-
MOC-3	10/03/2009	13:30	3.856	9.73	0.37	6.96	-	-	353	430	311	< 4	65	1,650	212	-	< 0.05	14.9	7.3	11	19.9	24	359	3,400	3.77	1,710	0.50	-
MOC-3	04/13/2010	15:45	3.559	9.63	0.27	6.96	-	-	357	436	292	< 4	66	1,550	200	-	< 0.05	17.8	7.3	12	19.9	21	372	3,320	3.77	1,820	0.50	-
MOC-3	09/16/2010	16:00	3.849	10.28	0.90	7.00	-	-	353	431	325	< 4	60	1,660	206	-	< 0.05	16.6	7.2	11	20	38.5	374	3,280	3.7	1,810	0.40	-
MOC-3	05/04/2011	12:30	3.010	10.02	1.24	6.80	-	-	318	388	320	< 4	56	1,330	128	-	< 0.05	26.2	7.4	13	20	27.3	244	2,680	3.13	1,530	0.20	-
MOC-3	09/19/2011	15:04	3.800	9.62	1.56	6.60	2,477	-	-	-	-	-	62	-	-	-	-	-	-	-	-	-	-	2,900	-	-	-	-
MOC-3	05/16/2012	15:56	2.891	10.10	1.08	7.40	1,879	-	-	-	-	-	67	-	-	-	-	-	-	-	-	-	-	2,890	-	-	-	-
MOC-3	10/12/2012	11:44	3.542	8.42	0.665	6.53	2,272	235.8	-	-	-	-	64	-	-	-	-	-	-	-	-	-	-	2,960	-	-	-	-
MOC-3 Dup	10/12/2012	11:44	-	-	-	-	-	-	-	-	-	-	62	-	-	-	-	-	-	-	-	-	-	3,110	-	-	-	-
MOC-3	05/07/2013	19:35	2.920	10.18	1.04	7.24	1,860	116.0	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	2,520	-	-	-	-
MOC-3	09/25/2013	14:30	2.968	9.93	1.04	6.88	1,931	-43.4	-	-	-	-	59	-	-	-	-	-	-	-	-	-	-	2,670	-	-	-	-
MOC-4	10/17/2006	13:30	9.000	9.40	-	7.12	-	-	333	406	435	< 4	2,660	2,200	271	-	1.2	< 0.05	7.3	17	17.1	18.9	1,170	5,700	9.38	789	0.20	-
MOC-4	03/12/2006	16:00	8.985	9.68	0.09	6.83	-	-																				
MOC-4	10/04/2007	11:00	9.217	9.86	0.08	7.24	-	-	330	403	446	< 4	2,580	2,290	286	-	1.3	< 0.05	7.1	15	17.9	20.1	1,230	5,550	9.6	817	0.20	-
MOC-4	03/26/2008	16:30	9.068	9.59	0.26	7.47	-	-	342	417	403	< 4	2,590	2,080	261	-	1.2	< 0.05	7.1	14	15.6	17	1,130	5,440	9.09	779	0.20	-
MOC-4	10/25/2008	12:08	9.767	9.48	0.32	7.05	-	-	340	415	416	< 4	2,420	2,150	271	-	1.3	< 0.05	7.4	14	16	18.7	1,160	5,470	9	834	0.20	-
MOC-4	04/23/2009	13:00	9.104	9.72	0.31	7.35	-	-	334	408	394	< 4	2,300	2,020	250	-	1.4	< 0.05	7.3	16	16.0	18.0	1,120	5,040	8.9	793	0.20	-
MOC-4	10/03/2009	12:50	9.221	9.80	0.21	7.13	-	-	337	411	405	< 4	2,530	2,050	253	-	1.3	< 0.01	7.2	15	16.4	19	1,090	5,470	8.75	635	0.20	-
MOC-4	04/14/2010	17:45	8.591	10.01	0.45	7.14	-	-	337	412	391	< 4	2,750	2,000	248	-	1.3	< 0.01	7.3	17	16.5	18	1,200	5,400	9	750	0.20	-
MOC-4	09/22/2010	12:25	7.959	9.88	0.26	7.17	-	-	344	420	398	< 4	2,400	2,000	245	-	1.3	0.02	7.5	15	16.2	18.8	1,160	5,380	8.6	674	0.20	-
MOC-4	05/05/2011	15:30	9.030	10.10	0.65	6.91	-	-	356	435	375	< 4	2,410	1,920	238	-	1.1	0.02	7.3	15	18.3	21	1,170	5,350	8.41	835	0.20	-
MOC-4	09/23/2011	12:13	8.572	10.03	0.24	7.30	5,575	-	-	-	-	-	2,460	-	-	-	-	-	-	-	-	-	-	5,220	-	-	-	-
MOC-4	05/17/2012	15:02	9.167	9.54	0.11	6.84	5,958	-	-	-	-	-	2,580	-	-	-	-	-	-	-	-	-	-	4,890	-	-	-	-
MOC-4	10/10/2012	12:18	11.58	10.37	0.26	7.35	7,524	-	-	-	-	-	2,500	-	-	-	-	-	-	-	-	-	-	5,140	-	-	-	-
MOC-4	05/10/2013	15:28	8.696	10.75	0.14	7.18	5,649	229.2	-	-	-	-	2,310	-	-	-	-	-	-	-	-	-	-	5,480	-	-	-	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
MOC-4	09/27/2013	16:50	8.818	10.45	0.14	7.34	5,732	-145.3	-	-	-	-	2,340	-	-	-	-	-	-	-	-	-	-	5,480	-	-	-	-
MOC-16	10/16/2006	15:45	4.000	9.40	-	-	-	-	440	537	369	< 4	79	2,150	297	-	< 0.1	30.5	7.3	11	24.6	23.5	388	4,040	4.49	2,260	0.20	-
MOC-16	10/03/2007	10:35	4.351	9.82	0.19	6.99	-	-																				
MOC-20A	10/16/2006	11:00	4.000	9.20	-	7.07	-	-	339	413	478	< 4	126	2,920	419	-	0.4	35.4	7.1	26	29.7	31.2	469	5,500	5.73	3,290	0.40	-
MOC-20A	03/13/2007	13:40	5.436	9.23	0.73	6.63	-	-	343	419	503	< 4	128	3,020	429	-	0.9	41.7	7.2	24	37.9	-	464	5,480	5.78	3,220	0.39	-
MOC-20A	10/03/2007	17:00	5.553	9.98	1.64	6.90	-	-	311	379	473	< 4	125	2,860	408	-	0.3	22	7.2	23	40.1	106	462	5,370	5.89	3,290	0.40	-
MOC-20A	03/26/2008	15:00	5.469	10.07	1.13	7.46	-	-	315	385	473	< 4	119	2,870	411	-	0.6	19.7	7.0	22	30.8	302	425	5,260	5.49	3,290	0.40	-
MOC-20A	10/24/2008	11:46	5.499	9.58	-	7.06	-	-	280	342	476	< 4	133	2,970	433	-	< 0.1	9.65	7.4	22	29.9	32.1	486	5,310	5.57	3,390	0.50	-
MOC-20A	04/22/2009	11:00	5.711	9.46	0.34	7.12	-	-	271	331	469	< 4	120	2,930	428	-	< 0.1	10.80	7.4	24	29.7	28.0	464	4,800	5.5	3,290	0.40	-
MOC-20A	10/04/2009	9:10	5.521	9.04	1.03	6.94			320	391	468	< 4	112	2,870	415	-	< 0.05	17.8	7.2	21	26.9	33	432	5,310	5.44	3,060	0.40	-
MOC-20A	04/14/2010	10:20	5.328	9.28	1.56	6.86	-	-	328	400	470	< 4	110	2,830	403	-	0.1	14.3	7.1	26	26.8	33	458	5,280	5.51	3,320	0.40	-
MOC-20A	09/17/2010	9:30	5.588	9.14	0.87	6.91	-	-	306	373	478	< 4	110	2,920	419	-	0.1	18.7	7.3	25	27.1	35.1	480	5,590	5.54	3,190	0.40	-
MOC-20A	05/04/2011	10:45	5.522	8.89	1.10	6.93	-	-	286	349	450	< 4	150	2,820	411	-	< 0.1	10.3	7.5	22	28.5	30.1	456	5,620	5.27	3,570	0.40	-
MOC-20A	09/23/2011	10:37	5.800	10.61	1.07	6.70	3,769	-	-	-	-	-	150	-	-	-	-	-	-	-	-	-	-	5,390	-	-	-	-
MOC-20A	05/18/2012	8:15	5.775	8.72	0.91	6.00	3,753	-	-	-	-	-	157	-	-	-	-	-	-	-	-	-	-	5,160	-	-	-	-
MOC-20A	10/14/2012	9:52	5.670	7.96	1.19	6.53	3,683	89.8	-	-	-	-	140	-	-	-	-	-	-	-	-	-	-	5,370	-	-	-	-
MOC-20A	05/09/2013	9:15	5.496	9.18	0.80	7.11	3,572	-95.0	-	-	-	-	134	-	-	-	-	-	-	-	-	-	-	5,470	-	-	-	-
MOC-20A	09/25/2013	9:28	5.162	9.44	0.93	6.94	3,355	-38.4	-	-	-	-	136	-	-	-	-	-	-	-	-	-	-	5,210	-	-	-	-
MOC-20B	10/16/2006	16:45	3.000	9.20	-	7.14	-	-	407	497	336	< 4	164	1,640	195	-	1.3	< 0.05	7.0	10	26.1	38.1	496	3,750	4.40	2,060	0.30	-
MOC-20B	03/13/2007	15:00	4.271	9.65	0.1	6.52	-	-	400	488	340	< 4	163	1,680	202	-	1.3	< 0.05	7.1	9	29.7	-	513	3,790	4.46	2,020	0.32	-
MOC-20B	10/03/2007	13:30	4.383	10.04	0.11	6.95	-	-	402	490	323	< 4	181	1,600	192	-	1.2	< 0.05	7.0	9	25.9	30.6	490	3,800	4.68	2,050	0.30	-
MOC-20B	03/26/2008	14:30	4.351	9.60	0.29	7.55	-	-	409	499	330	< 4	176	1,640	199	-	1.1	< 0.05	7.0	8	26	28.3	481	3,640	4.39	2,040	0.30	-
MOC-20B	10/23/2008	17:10	4.289	9.82	0.64	7.15	-	-	406	495	342	< 4	198	1,700	207	-	1.2	< 0.05	7.0	8	26.8	32.2	506	3,700	4.45	2,050	0.30	-
MOC-20B	04/21/2009	12:40	4.531	9.71	0.27	6.86	-	-	398	486	331	< 4	180	1,650	199	-	1.3	< 0.05	7.1	9	25.6	31.0	481	3,440	4.4	2,010	0.30	-
MOC-20B	10/02/2009	11:30	4.677	9.71	0.29	6.93	-	-	398	485	339	< 4	196	1,690	204	-	1.2	< 0.01	7.0	8	26.2	33	467	3,690	4.4	1,910	0.30	-
MOC-20B	04/14/2010	16:30	4.349	9.66	0.54	6.79	-	-	395	482	330	< 4	212	1,660	204	-	1.1	< 0.01	7.0	10	26.9	32	534	3,930	4.49	2,130	0.30	-
MOC-20B	09/21/2010	13:27	4.467	9.68	0.37	6.82	-	-	400	488	355	< 4	195	1,730	205	-	1.2	0.02	7.4	9	26.4	28.5	512	3,870	4.42	1,970	0.30	-
MOC-20B	05/05/2011	15:00	4.531	9.34	0.22	6.55	-	-	410	500	328	< 4	251	1,670	206	-	1.0	0.01	7.0	9	26.9	32.3	504	3,990	4.34	2,220	0.30	-
MOC-20B	09/21/2011	16:03	5.080	9.13	0.25	6.51	3,302	-	-	-	-	-	250	-	-	-	-	-	-	-	-	-	-	3,830	-	-	-	-
MOC-20B Dup	09/21/2011	16:03	-	-	-	-	-	-	-	-	-	-	247	-	-	-	-	-	-	-	-	-	-	3,960	-	-	-	-
MOC-20B	05/17/2012	12:30	4.680	9.92	0.24	6.21	3,042	-	-	-	-	-	225	-	-	-	-	-	-	-	-	-	-	3,790	-	-	-	-
MOC-20B Dup	05/17/2012	12:30	-	-	-	-	-	-	-	-	-	-	224	-	-	-	-	-	-	-	-	-	-	3,780	-	-	-	-
MOC-20B	10/13/2012	12:27	4.602	8.37	0.52	6.41	2,992	-113.8	-	-	-	-	213	-	-	-	-	-	-	-	-	-	-	3,950	-	-	-	-
MOC-20B	05/09/2013	10:29	4.629	9.86	0.30	8.35	3,009	-188.6	-	-	-	-	214	-	-	-	-	-	-	-	-	-	-	4,000	-	-	-	-
MOC-20B	09/24/2013	17:36	4.453	10.25	0.14	6.92	2,894	-65.8	-	-	-	-	209	-	-	-	-	-	-	-	-	-	-	3,940	-	-	-	-
PNR-4	06/01/2000	0:00	-	60.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PNR-4	08/10/2001	13:15	102.6	67.70	-	6.80	-	-	176	215	839	< 1	44,700	2,610	125	-	14.1	< 0.05	7.0	534	55.7	-	24,800	71,200	75.1	1,800	-	-
PNR-4	08/10/2001	13:20	102.6	67.70	-	6.80	-	-	190	232	793	< 1	44,600	2,480	121	-	14.4	< 0.05	7.0	500	52.3	-	24,000	71,200	78.2	1,900	-	-
PNR-4	11/08/2001	15:00	-	94.40	-	-	-	-	122	149	1,210	< 1	31,800	3,210	43	-	15.1	0.08	7.9	453	-	237	20,700	61,400	49.2	1,310	-	-
PNR-4	Plugged and abandoned																											
PNR-5	06/01/2000	18:10	96.6	41.60	-	7.30		5.6	267	325	1,170	< 1	38,900	3,810	213	-	-	< 0.05	7.4	396	-	-	22,600	65,200	85.1	1,690	-	0.2
PNR-5	08/08/2001	11:00	96	40.80	-	6.60	-	-	319	390	1,100	< 1	40,700	3,850	264	-	16.8	< 0.05	6.7	436	36.6	-	23,400	68,600	79.5	1,400	-	-
PNR-5	08/15/2001	11:00	-	38.60	-	6.80	-	-	299	365	1,210	< 1	41,200	4,140	271	-	17.9	< 0.05	6.9	460	40.6	-	23,800	68,000	72.8	1,520	-	-
PNR-5	11/07/2001	11:10	-	43.33	-	5.80	-	-	335	409	1,030	< 1	33,700	3,540	234	-	17.9	< 0.05	6.5	368	-	36.7	21,500	67,200	52.7	1,290	-	-
PNR-5	02/20/2002	10:02	92.2	41.70	-	6.27	-	-	449	548	1,100	< 4	44,500	3,770	248	-	17.3	< 0.05	6.7	432	30	-	23,500	67,700	61.3	1,270	-	-
PNR-5	05/22/2002	10:40	93.6	41.10	-	6.42	-	-	335	409	975	< 4	43,500	3,310	212	-	16.4	< 0.05	6.7	377	39	-	21,800	68,800	68.4	1,870	0.35	-
PNR-5	08/20/2002	17:10	93.3	39.20	-	6.30	-	-	323	394	1,040	< 4	42,600	3,590	241	-	15.9	< 0.05	6.6	297	36	37	23,700	69,700	71.9	1,570	0.33	-
PNR-5	11/06/2002	11:10	102.1	40.00	-	6.37	-	-	325	397	1,140	< 4	42,800	3,870	250	-	16.3	< 0.05	6.7	446	29	46	22,800	68,100	61.3	1,730	0.33	-
PNR-5	03/04/2003	16:30	103.2	35.10	-	6.60	-	-	320	391	1,070	< 4	42,100	3,570	218	-	16.1	< 0.05	6.6	413	34	52	22,100	67,800	50.5	1,880	0.30	-
PNR-5	05/28/2003	12:35	97	41.60	-	6.39	-	-	329	401	1,020	< 1	39,600	3,490	228	-	15.6	< 0.05	6.5	473	32	41	23,000	69,300	95.2	1,480	0.36	-
PNR-5	08/13/2003	14:59	89.3	40.60	-	6.64	-	-	328	400	1,110	< 1	42,000	3,530	256	-	17.0	< 0.05	6.7	450	38	40	23,100	69,700	90.2	1,170	0.36	-
PNR-5	11/04/2003	15:30	-	37.40	-	6.29	-	-	324	395	654	< 4	42,200	2,400	186	-	16.7	< 0.05	6.6	359	27	27	19,300	68,400	48.9	1,200	0.36	-
PNR-5	03/17/2004	10:15	102	40.30	-	6.42	-	-	327	399	1,170	< 1	44,300	3,960	256	-	16.7	< 0.05	6.8	507	38	35	25,000	68,500	94.8	1,170	0.32	-
PNR-5	06/09/2004	9:40	94.8	39.10	-	6.59	-	-	311	379	1,030	< 4	42,900	3,520	228	-	16.4	< 0.05	6.6	400	36	35	22,400	65,800	97.1	1,720	0.35	-
PNR-5	09/14/2004	16:20	100.3	38.10	-	7.68	-	-	330	403	1,140	< 4	43,400	3,890	253	-	17.8	< 0.05	6.8	446	39	44	24,000	69,700	98.1	1,590	0.34	-
PNR-5	11/17/2004	13:50	107.5	35.80	-	6.58	-	-	300	366	1,070	< 4	42,800	3,640	233	-	15.5	< 0.05	6.6	445	30	43	24,300	67,600	94.9	1,560	0.34	-
PNR-5	03/02/2005	12:15	97.2	38.10	-	6.41	-	-	326	398	1,150	< 4	43,700	3,950	259	-	17.3	< 0.05	6.7	501	39	34	27,200	67,200	96.7	1,590	0.37	-
PNR-5	05/25/2005	17:20	100	36.20	-	6.26	-	-	278	339	1,190	< 4	43,100	4,130	279	-	16.2	< 0.05	6.6	446	34	31	26,400	68,400	95.6	1,910	0.43	-
PNR-5	08/17/2005	11:00	99.7	48.40	-	6.26	-	-	315	385	1,090	< 4	35,400	3,800	261	-	16.8	< 0.05	6.8	464	31	42	23,300	65,300	94.8	1,300	0.35	-
PNR-5	11/16/2005	13:00	104.8	34.20	-	6.81	-	-	273	334	1,170	< 4	40,900	4,110	286	-	14.9	< 0.05	6.7	420	32	33	25,500	58,700	95.8	1,330	0.32	-
PNR-5	02/09/2006	15:20	103.6	34.70	-	6.56	-	-	317	387	1,010	< 4	38,500	3,410	217	-	15.4	< 0.05	6.8	430	35	35	23,000	59,400	91.6	1,400	0.34	-
PNR-5	05/25/2006	10:30	85.52	35.47	-	6.53	-	-	321	392	990	< 4	37,700	3,380	220	-	18.0	< 0.05	7.4	382	37	34	23,000	49,400	89	1,270	0.35	-
PNR-5	08/23/2006	15:40	87.2	36.10	0.06	6.31	-	-	326	398	837	< 4	32,900	2,850	185	-	14.0	< 0.05	6.6	310	41	37	19,900	56,400	87.6	1,090	0.40	-
PNR-5	12/07/2006	13:25	84.74	33.80	-	6.27	-	-	380	464	796	< 4	32,400	2,740	182	-	15.2	< 0.05	6.8	332	37	37	19,800	53,100	83.8	1,040	0.40	-
PNR-5	03/14/2007	14:14	92.9	33.20	-	6.51	-	-	416	507	811	< 4	32,800	2,910	215	-	13.0	< 0.05	6.8	329	537	-	20,000	50,800	79.8	892	0.38	-
PNR-5	10/05/2007	11:40	73.7	29.70	-	6.11	-	-	495	604	684	< 4	27,900	2,440	177	-	13.0	< 0.05	6.8	278	37	34	17,100	46,400	73.1	913	0.4	-
PNR-5	03/27/2008	16:30	68.20	33.30	-	6.90	-	-	652	796	482	< 4	23,500	1,710	124	-	9.5	< 0.05	6.8	228	39	39	14,100	38,300	61.2	689	0.50	-
PNR-5	10/27/2008	13:35	51.99	31.51	0.05	6.75	-	-	743	906	458	< 4	20,300	1,650	123	-	9.2	< 0.05	7.0	216	36	46	13,200	32,500	52.9	785	0.60	-
PNR-5	04/15/2009	14:20	44.66	31.12	0.17	6.79	-	-	850	1,040	303	< 4	15,900	1,180	95	-	6.6	< 0.05	7.1	167	33.0	29.0	10,400	25,600	44.9	842	0.60	-
PNR-5	10/02/2009	14:00	37.17	30.59	0.13	6.81	-	-	936	1,140	228	< 4	14,200	846	67	-	5.2	< 0.01	7.2	127	36	36	8,330	22,400	37.2	589	0.70	-
PNR-5	04/15/2010	16:45	25.47	30.82	0.12	7.10	-	-	957	1,170	142	< 4	10,400	558	49	-	3.7	< 0.01	7.2	108	36	35	6,860	17,100	28.1	772	0.90	-
PNR-5	09/21/2010	11:15	17.02	30.69	0.48	7.07	-	-	1210	1,470	50	< 4	4,840	197	17	-	2.6	0.02	7.8	59	35.7	37.1	3,980	10,100	16.4	619	1.80	-
PNR-5	05/06/2011	11:20	13.17	30.19	0.72	7.32	-	-	1290	1,580	31	< 4	3,480	120	10	-	0.9	0.01	7.4	45	41.2	44	3,030	8,270	12.7	862	2.30	-
PNR-5	09/19/2011	16:33	14.23	29.73	0.34	7.22	9,267	-	-	-	-	-	3,950	-	-	-	-	-	-	-	-	-	-	7,950	-	-	-	-
PNR-5	05/16/2012	15:20	11.178	27.76	0.10	8.16	7,266	-	-	-	-	-	2,620	-	-	-	-	-	-	-	-	-	-	6,300	-	-	-	-
PNR-5	10/10/2012	15:59	9.731	27.33	0.52	7.57	6,327	-	-	-	-	-	2,310	-	-	-	-	-	-	-	-	-	-	5,660	-	-	-	-
PNR-5	05/07/2013	17:46	8.682	27.93	0.15	7.55	5,643	139.8	-	-	-	-	1,640	-	-	-	-	-	-	-	-	-	-	5,530	-	-	-	-
PNR-5	09/25/2013	16:16	7.724	27.34	0.10	7.51	5,040	-49.3	-	-	-	-	1,330	-	-	-	-	-	-	-	-	-	-	5,030	-	-	-	-
PNR-5 Dup	09/25/2013	16:16	-	-	-	-	-	-	-	-	-	-	1,320	-	-	-	-	-	-	-	-	-	-	5,090	-	-	-	-
PNR-6	05/31/2000	0:00	1.2	9.40	-	5.90		85.2	511	624	109	< 1	14	587	77	-	-	0.06	8.0	6	-	-	75	849	1.21	229	-	0.09
PNR-6	08/07/2001	9:55	1.7	10.40	-	6.70	-	-	555	677	111	< 1	31	724	108	-	0.3	0.28	7.1	6	21.2	-	124	1,350	1.75	559	-	-
PNR-6	08/15/2001	15:30	-	9.20	-	7.60	-	-	534	652	126	< 1	30	835	126	-	0.2	0.25	7.3	7	23	-	143	1,280	1.71	530	-	-
PNR-6	11/07/2001	8:55	0.8	7.80	-	7.50	-	-	534	651	109	< 1	30	690	101	-	0.2	0.31	7.3	6	-	35.8	117	1,210	1.62	437	-	-
PNR-6	02/19/2002	13:30	2.06	10.30	-	7.22	-	-	481	587	151	< 4	49	966	143	-	0.3	0.49	7.0	7	40.6	-	121	1,740	2.25	869	-	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Flouride mg/L	Iron mg/L
PNR-6	05/21/2002	12:15	2.4	11.70	-	7.43	-	-	513	626	142	< 4	35	837	117	-	0.3	0.42	7.5	7	30.9	-	123	1,370	1.86	831	0.48	-
PNR-6	08/19/2002	16:35	1.4	10.30	-	7.10	-	-	514	627	112	< 4	23	710	104	-	0.5	0.3	7.4	5	22.5	43.5	91	1,180	1.7	450	0.44	-
PNR-6	11/05/2002	11:25	1.3	9.30	-	7.27	-	-	530	647	100	< 4	19	589	82	-	0.4	0.19	7.5	6	21.2	27	97	1,000	1.5	341	0.47	-
PNR-6	03/04/2003	10:40	1.2	8.30	-	6.79	-	-	530	646	94	< 4	31	567	81	-	0.3	0.12	7.6	6	21.9	30.3	120	897	1.33	276	0.50	-
PNR-6	05/13/2003	11:30	0.8	11.50	-	7.78	-	-	545	665	94	< 4	16	573	82	-	0.2	0.16	7.2	7	21.3	51.8	99	918	1.36	265	0.58	-
PNR-6	08/13/2003	8:16	1.1	9.60	-	7.99	-	-	521	635	95	< 1	16	594	86	-	0.3	0.26	7.4	6	22	42.8	95	955	1.44	323	0.48	-
PNR-6	11/04/2003	13:30	1.1	8.30	-	7.13	-	-	535	652	100	< 4	26	643	95	-	0.2	0.27	7.6	7	23.1	40.1	114	1,140	1.53	460	0.53	-
PNR-6	06/08/2004	10:20	-	10.30	-	7.57	-	-	478	583	241	< 4	126	1,990	337	-	< 0.1	2.47	7.4	10	22.2	32.2	283	3,740	3.84	2,180	0.47	-
PNR-6	09/14/2004	9:15	2.6	9.80	-	7.55	-	-	535	653	155	< 4	56	1,230	205	-	< 0.1	1.18	7.6	7	23.6	26.9	183	2,240	2.65	1,120	0.48	-
PNR-6	11/16/2004	10:17	2.3	9.60	-	7.42	-	-	526	642	123	< 4	34	901	144	-	< 0.1	0.62	7.4	7	25.1	26.1	124	1,370	1.92	605	0.50	-
PNR-6	02/28/2005	17:30	1.9	9.50	-	7.08	-	-	541	660	136	< 4	31	865	128	-	0.2	0.39	7.3	7	23.8	26.6	96	1,340	1.77	541	0.48	-
PNR-6	05/23/2005	18:00	1.4	9.90	-	7.40	-	-	454	553	140	< 4	28	852	122	-	0.5	0.37	7.2	7	23.2	26.4	92	1,320	1.73	501	0.49	-
PNR-6	08/16/2005	9:35	1.59	10.10	-	7.19	-	-	535	653	139	< 4	27	856	124	-	0.3	0.34	7.5	6	21.7	1.1	94	1,270	1.73	482	0.49	-
PNR-6	11/15/2005	10:00	1.59	7.60	-	7.19	-	-	497	606	118	< 4	25	755	112	-	0.2	0.21	7.5	8	23.8	33.3	95	1,190	1.7	487	0.96	-
PNR-6	02/07/2006	10:47	1.2	7.90	-	7.23	-	-	558	681	104	< 4	17	651	95	-	0.3	0.11	7.1	7	40.3	215	97	993	1.5	332	0.50	-
PNR-6	05/23/2006	10:30	1.381	12.80	-	7.29	-	-	520	635	108	< 4	20	655	93	-	0.3	0.16	8.0	7	44.7	115	103	924	1.48	330	0.52	-
PNR-6	08/22/2006	10:45	1.41	9.40	-	7.26	-	-	506	618	88	< 4	12	557	82	-	0.3	0.09	7.2	7	22.9	27.4	93	820	1.3	214	0.49	-
PNR-6	12/05/2006	13:40	1.374	8.77	-	7.11	-	-	509	621	91	< 4	16	594	89	-	0.2	0.11	7.2	6	22.7	30.5	99	914	1.5	274	0.50	-
PNR-6	03/14/2007	10:15	1.207	9.39	1.54	6.96	-	-	503	613	97	< 4	14	596	86	-	0.4	0.17	7.5	6	25.8	-	93	919	1.44	262	0.50	-
PNR-6	10/02/2007	18:55	2.66	10.90	-	7.29	-	-	481	587	130	< 4	37	933	148	-	0.5	0.66	7.6	6	24.7	36.8	132	1,520	2.19	701	0.50	-
PNR-6	03/26/2008	11:50	1.423	9.23	0.22	7.09	-	-	505	616	95	< 4	19	616	92	-	0.4	0.21	7.5	5	22.5	27.2	91	948	1.45	315	0.50	-
PNR-6	10/22/2008	14:40	1.801	8.91	0.45	7.14	-	-	486	593	119	< 4	25	801	122	-	0.5	0.48	7.3	6	25.4	29.2	111	1,210	1.74	489	0.50	-
PNR-6	04/17/2009	15:15	5.457	9.06	3.11	7.00	-	-	405	494	346	< 4	153	2,950	506	-	< 0.1	3.62	7.4	12	24.9	29.0	420	4,570	5.5	3,310	0.40	-
PNR-6	10/04/2009	12:55	3.722	8.58	1.88	7.08	-	-	483	590	161	< 4	45	1,410	245	-	< 0.05	1.72	7.4	8	25.5	29	211	2,400	2.86	1,160	0.50	-
PNR-6	04/13/2010	11:15	4.359	8.46	4.56	7.06	-	-	403	492	354	< 4	113	2,830	473	-	< 0.05	3.67	7.3	12	25.2	25	345	4,820	5.03	3,020	0.40	-
PNR-6	09/16/2010	16:30	3.390	8.52	1.52	6.95	-	-	468	570	182	< 4	46	1,540	264	-	0.2	1.90	7.3	9	25.7	34.8	227	2,720	3.05	1,450	0.40	-
PNR-6	05/03/2011	16:45	7.72	8.31	6.20	6.86	-	-	401	489	465	< 4	117	4,720	864	-	< 0.01	6.63	7.4	12	25	29.4	753	8,470	8.1	5,640	0.40	-
PNR-6	09/20/2011	13:08	6.163	8.01	3.37	6.80	4,002	-	-	-	-	-	61	-	-	-	-	-	-	-	-	-	-	5,360	-	-	-	-
PNR-6	10/12/2012	10:17	3.555	8.30	1.686	6.63	2,305	270.9	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-	2,900	-	-	-	-
PNR-6	09/26/2013	10:12	4.486	9.13	2.06	7.27	2,908	-56.2	-	-	-	-	36	-	-	-	-	-	-	-	-	-	-	3,820	-	-	-	-
PNR-7	05/31/2000	0:00	52.4	10.00	-	6.60		48.0	343	418	2,770	< 1	21,700	15,700	2,130	-	-	4.11	7.2	55	-	-	6,800	35,300	48.2	1,540	-	2.6
PNR-7	08/07/2001	17:20	53.1	9.60	-	6.90	-	-	368	449	2,480	< 1	23,300	13,800	1,850	-	0.3	4.78	6.7	52	17	-	6,740	39,300	49.4	1,370	-	-
PNR-7	08/15/2001	17:55	33.42	9.60	-	7.00	-	-	347	423	2,600	< 1	23,000	15,700	2,220	-	0.4	3.86	6.9	57	19.9	-	7,910	40,600	44.9	1,590	-	-
PNR-7	11/07/2001	11:50	-	8.90	-	6.60	-	-	351	428	2,630	< 1	22,100	14,600	1,960	-	0.4	4.06	6.6	52	-	20.2	7,060	40,600	34.7	1,440	-	-
PNR-7	02/19/2002	17:05	50.4	9.40	-	6.49	-	-	351	429	2,700	< 4	23,700	14,800	1,960	-	0.3	4.19	6.7	57	17	-	7,550	36,200	41	1,390	-	-
PNR-7	05/22/2002	13:10	57.7	9.50	-	6.66	-	-	356	435	2,490	< 4	23,500	13,900	1,860	-	0.3	3.91	6.6	60	29	-	7,450	39,800	45.1	1,650	0.25	-
PNR-7	08/20/2002	15:07	49.8	10.90	-	6.60	-	-	353	431	2,510	< 4	23,900	14,400	1,990	-	0.4	3.58	6.7	47	17	26	8,200	42,100	45.9	1,460	0.25	-
PNR-7	11/05/2002	14:50	55	10.10	-	6.72	-	-	356	434	2,660	< 4	24,100	14,500	1,900	-	0.4	3.87	6.8	57	14	19	7,690	44,500	37.4	1,580	0.24	-
PNR-7	03/04/2003	15:05	51.6	9.10	-	6.57	-	-	346	422	2,600	< 4	22,900	14,200	1,880	-	0.4	3.85	6.6	72	17	17	8,650	39,800	29	1,500	0.30	-
PNR-7	08/12/2003	12:20	59.5	11.60	-	6.35	-	-	354	432	2,730	< 1	24,300	3,050	1,950	-	0.3	3.23	6.5	69	20	18	8,460	45,100	56	964	< 0.1	-
PNR-7	11/04/2003	14:30	49.7	8.10	-	6.31	-	-	359	438	2,090	< 4	24,900	11,400	1,490	-	0.4	3.58	6.8	55	14	22	6,880	40,200	23.7	1,110	< 0.73	-
PNR-7	03/17/2004	17:10	48.5	12.70	-	6.75	-	-	367	447	2,870	< 1	25,300	15,400	2,010	-	0.4	3.71	6.6	68	20	18	9,040	41,200	56.9	1,100	0.23	-
PNR-7	06/08/2004	18:40	51.8	10.10	-	6.75	-	-	367	448	2,530	< 4	25,800	13,600	1,770	-	0.4	3.73	6.6	69	18	23	8,850	46,400	60	1,570	0.28	-
PNR-7	09/14/2004	18:00	57.2	10.20	-	7.13	-	-	382	466	2,630	< 4	25,000	14,100	1,840	-	0.4	3.65	6.8	88	22	23	9,390	46,100	60.8	1,350	0.25	-
PNR-7	11/17/2004	13:40	66.2	10.20	-	6.91	-	-	365	446	2,670	< 1	25,500	14,200	1,830	-	0.4	3.85	6.6	71	21	20	9,700	43,000	61.3	1,580	0.26	-
PNR-7	03/01/2005	17:30	53.8	9.60	-	6.49	-	-	370	452	2,560	< 4	25,400	13,700	1,780	-	0.4	3.56	6.6	72	22	23	9,940	42,100	60.6	1,450	0.27	-
PNR-7	05/25/2005	13:47	63.5	10.20	-	6.42	-	-	345	421	2,640	< 4	25,300	14,000	1,800	-	0.4	3.77	6.6	49	17	16	10,600	44,100	59.7	1,700	0.30	-
PNR-7	08/17/2005	10:52	62.7	10.60	-	6.51	-	-	399	487	2,840	< 4	26,100	15,100	1,940	-	0.4	3.59	6.7	71	18	22	10,500	45,400	61.9	1,590	0.24	-
PNR-7	11/16/2005	14:00	66.7	8.40	-	6.77	-	-	350	427	2,800	< 4	26,800	14,900	1,920	-	0.4	3.57	6.8	66	25	25	10,700	43,300	63	1,480	0.25	-
PNR-7	02/09/2006	14:15	60.2	8.00	-	6.83	-	-	395	482	2,840	< 4	25,100	14,600	1,820	-	0.5	3.7	6.8	98	18	19	11,000	41,200	61.9	1,450	0.22	-
PNR-7	05/24/2006	16:10	50.2	10.20	-	6.56	-	-	384	468	2,560	< 4	26,200	13,600	1,750	-	0.5	3.61	7.3	76	18	20	11,500	42,300	62.9	1,470	0.24	-
PNR-7	08/24/2006	10:24	52.4	9.20	0.36	6.59	-	-	363	442	2,520	< 4	26,600	13,200	1,660	-	0.4	3.69	6.5	67	22	22	10,800	44,400	66.1	1,450	0.20	-
PNR-7	12/08/2006	10:15	64.05	8.59	-	6.71	-	-	369	450	2,460	< 4	23,800	12,600	1,580	-	0.5	3.44	6.7	57	19	21	10,400	43,100	66.7	1,410	0.20	-
PNR-7	03/15/2007	12:15	60.54	8.70	0.44	6.65	-	-	371	452	2,670	< 4	27,600	13,900	1,750	-	0.5	3.39	6.5	105	194	-	11,700	45,400	66.3	1,350	< 0.1	-
PNR-7	10/04/2007	19:00	65.47	8.89	0.10	6.35	-	-	372	453	2,560	< 4	26,500	13,100	1,630	-	0.5	3.8	6.4	72	19	24	11,000	45,400	70.1	1,510	0.20	-
PNR-7	03/28/2008	10:30	69.48	8.91	0.23	6.37	-	-	381	465	2,600	< 4	27,200	13,100	1,630	-	0.6	3.69	6.6	66	20	20	11,300	42,100	63.7	2,600	0.20	-
PNR-7	10/25/2008	17:30	70.38	8.71	0.25	6.50	-	-	380	464	2,790	< 4	29,200	14,300	1,770	-	0.5	3.35	6.7	57	17	26	12,300	45,200	66.7	1,630	0.20	-
PNR-7	04/15/2009	17:15	65.37	8.89	0.93	6.36	-	-	380	464	2,400	< 4	26,700	12,100	1,490	-	0.5	3.31	6.8	65	9.0	7.0	11,800	45,500	66.6	1,430	0.20	-
PNR-7 Dup	04/15/2009	17:15	-	-	-	-	-	-	390	476	2,190	< 4	25,100	11,100	1,360	-	0.5	3.29	6.8	61	11	5	10,900	42,500	62.6	1,310	0.20	-
PNR-7	10/06/2009	15:15	68.7	8.75	0.14	6.31	-	-	375	458	2,270	< 4	23,400	11,800	1,480	-	0.5	3.32	6.7	61	26	< 20	10,800	37,500	64.4	961	0.10	-
PNR-7	04/19/2010	13:30	66.04	9.33	0.19	6.53	-	-	379	462	2,490	< 4	30,300	12,500	1,530	-	0.5	3.1	6.6	87	20	< 20	11,600	46,900	63.6	1,470	0.20	-
PNR-7	09/22/2010	14:00	67.00	8.76	1.25	6.39	-	-	386	471	2,450	< 4	28,600	12,100	1,440	-	0.5	3.12	7.0	76	15	18	13,100	48,600	62.3	1,060	0.20	-
PNR-7	05/06/2011	15:30	63.25	9.06	1.62	6.27	-	-	399	487	2,340	< 4	27,800	11,500	1,370	-	0.5	2.84	6.6	62	19	20	11,000	50,400	57.6	1,580	0.20	-
PNR-7	09/23/2011	9:46	63.55	8.47	0.74	6.37	41,370	-	-	-	-	-	27,700	-	-	-	-	-	-	-	-	-	-	46,900	-	-	-	-
PNR-7 Dup	09/23/2011	9:46	-	-	-	-	-	-	-	-	-	-	27,800	-	-	-	-	-	-	-	-	-	-	45,300	-	-	-	-
PNR-7	05/18/2012	9:20	66.3	7.02	0.46	-	-	-	-	-	-	-	28,300	-	-	-	-	-	-	-	-	-	-	39,500	-	-	-	-
PNR-7	10/25/2012	14:01	65.79	8.34	0.46	6.28	42,700	-36.5	-	-	-	-	29,400	-	-	-	-	-	-	-	-	-	-	47,200	-	-	-	-
PNR-7	05/08/2013	17:52	67.27	8.83	5.12	6.18	43,750	220.6	-	-	-	-	27,500	-	-	-	-	-	-	-	-	-	-	50,200	-	-	-	-
PNR-7	Well plugged and abandoned May 2013, replaced with PNR-7-13																											
PNR-7-13	05/12/2013	14:36	55.37	9.44	-	6.48	35,990	122.5	-	-	-	-	22,900	-	-	-	-	-	-	-	-	-	-	44,900	-	-	-	-
PNR-7-13	07/04/2013	10:50	37.56	8.80	4.16	6.44	24,360	35.5	380	463	1,250	< 4	14,300	6,660	860	1.26	0.58	2.74	7.2	33	16.7	20	5,900	27,500	37.6	2,960	0.3	< 0.1
PNR-7-13	09/25/2013	12:17	41.97	8.59	4.61	6.69	27,240	39.6	-	-	-	-	16,700	-	-	-	-	-	-	-	-	-	-	49,300	-	-	-	-
PNR-7-13 Dup	09/25/2013	12:17	-	-	-	-	-	-	-	-	-	-	18,500	-	-	-	-	-	-	-	-	-	-	48,100	-	-	-	-
PNR-8	05/31/2000	0:00	5.6	9.70	-	5.60		102.5	464	566	272	< 1	380	1,500	200	-	-	< 0.05	7.8	12	-	-	420	2,350	4.08	738	-	25.2
PNR-8	08/07/2001	13:50	4.3	9.90	-	7.50	-	-	459	560	266	< 1	764	1,470	196	-	0.4	< 0.05	7.1	10	20.7	-	406	3,460	4.38	1,210	-	-
PNR-8	08/16/2001	18:10	4.6	10.00	-	7.50	-	-	<1	< 1	254	< 1	647	1,420	191	-	0.3	< 0.05	2.3	8	26.1	-	406	4,460	12.8	2,990	-	-
PNR-8	11/06/2001	16:30	-	7.80	-	7.10	-	-	457	557	327	< 1	1,020	1,820	243	-	0.4	0.18	7.2	14	-	31.3	480	3,940	5.04	1,150	-	-
PNR-8	02/22/2002	16:00	5.93	11.50	-	7.58	-	-	489	596	307	< 4	888	1,680	222	-	0.3	< 0.05	7.2	15	462	-	481	3,640	4.86	1,180	-	-
PNR-8	05/21/2002	17:45	5.81	9.00	-	7.34	-	-	424	517	290	< 4	1,310	1,610	215	-	0.3	0.08	7.4	12	159	-	463	4,020	5.57	1,190	0.38	-
PNR-8	08/21/2002	10:10	4.2	10.30	-	7.30	-	-	404	492	320	< 4	1,180	1,810	246	-	0.5	0.08	7.3	11	20	140	435	4,240	5.77	1,290	0.35	-
PNR-8	11/05/2002	15:25	5.4	10.30	-	7.15	-	-	445	543	340	< 4	1,140	1,850	242	-	0.4	< 0.05	7.2	12	21	294	485	3,880	5.61	1,260	0.30	-
PNR-8	03/04/2003	12:10	5	9.90	-	7.58	-	-	433	529	336	< 4	1,170	1,860	247	-	0.3	< 0.05	7.1	13	22	95	528	3,960	5.46	1,280	0.30	-
PNR-8	05/13/2003	17:00	6.1	10.40	-	7.22	-	-	445	543	350	< 4	1,090	1,920	254	-	0.4	0.14	7.2	13	21	181	552	3,910	5.24	1,150	0.33	-
PNR-8	08/12/2003	9:46	4.2	10.60	-	7.18	-	-	445	543	367	< 1	1,170	2,020	268	-	0.3	< 0.05	7.1	12	23	80	584	4,640	5.68	1,090	0.31	-
PNR-8	11/04/2003	12:00	3.9	8.00	-	5.62	-	-	462	564	321	< 4	1,060	1,770	234	-	0.4	< 0.05	7.4	12	23.5	31.8	452	3,700	4.7	1,190	0.33	-
PNR-8	03/18/2004	11:30	7.8	9.90	-	7.25	-	-	465	567	348	< 1	1,120	1,930	258	-	0.3	0.06	7.2	12	25.7	64.3	491	3,890	5.03	1,060	0.34	-
PNR-8	06/08/2004	18:40	5.2	10.50	-	7.35	-	-	469	572	352	< 4	1,240	1,940	256	-	0.5	0.06	7.3	13	18.8	25.8	530	4,250	5.74	1,240	0.37	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Flouride mg/L	Iron mg/L
PNR-8	09/14/2004	17:05	4.5	12.10	-	7.70	-	-	440	537	360	< 4	1,070	1,960	256	-	0.5	0.06	7.3	13	23.7	38.1	514	4,120	5.67	1,080	0.34	-
PNR-8	11/16/2004	16:15	6.3	12.60	-	7.15	-	-	448	547	375	< 4	1,230	2,020	264	-	0.4	0.08	7.2	14	25.2	48.8	527	4,130	5.85	1,180	0.34	-
PNR-8	03/02/2005	15:30	5.62	9.20	-	7.27	-	-	474	579	383	< 4	1,400	2,150	290	-	0.5	< 0.05	7.3	17	25.5	35.1	650	4,390	6.2	1,210	0.36	-
PNR-8	05/26/2005	10:46	5.9	10.50	-	7.19	-	-	391	477	433	< 4	1,540	2,390	319	-	0.5	< 0.05	7.2	11	25.7	67.5	681	4,820	6.51	1,150	0.39	-
PNR-8	08/18/2005	11:50	6.3	12.40	-	7.45	-	-	287	350	400	< 4	1,420	2,230	299	-	0.4	< 0.05	7.3	12	20.1	47.8	594	4,600	6.44	1,170	0.35	-
PNR-8	11/17/2005	9:45	7.3	9.50	-	6.96	-	-	412	503	449	< 4	1,610	2,510	337	-	0.4	< 0.05	7.2	12	24.2	70.1	703	4,530	6.8	1,180	0.30	-
PNR-8	02/09/2006	9:45	6.8	9.90	-	7.68	-	-	465	568	417	< 4	1,590	2,310	309	-	0.5	< 0.05	7.3	16	24.7	63.3	707	4,780	7	1,180	0.29	-
PNR-8	05/24/2006	17:50	5.3	9.80	-	7.11	-	-	451	551	424	< 4	1,630	2,340	312	-	0.5	< 0.05	7.9	16	23.4	40.8	664	4,230	6.91	1,200	0.32	-
PNR-8	08/24/2006	12:30	7.8	10.10	-	7.22	-	-	422	515	434	< 4	1,620	2,410	322	-	0.5	0.14	7.0	16	21.8	61.7	724	4,960	7.25	1,170	0.30	-
PNR-8	12/07/2006	11:30	6.961	8.49	-	7.31	-	-	419	512	435	< 4	1,810	2,450	331	-	0.4	< 0.05	7.2	15	23.6	89	763	5,130	7.9	1,170	0.30	-
PNR-8	03/14/2007	13:25	7.772	9.37	2.88	7.23	-	-	427	520	495	< 4	2,210	2,760	369	-	0.5	0.2	7.1	19	36.3	-	899	5,430	8.34	1,070	0.31	-
PNR-8	10/04/2007	14:35	9.00	10.70	-	6.98	-	-	423	517	461	< 4	1,970	2,570	345	-	0.5	0.36	7.1	15	23.0	40.6	810	5,370	8.45	1,200	0.3	-
PNR-8	03/28/2008	11:30	8.291	9.17	-	7.02	-	-	421	513	502	< 4	2,270	2,800	375	-	0.5	0.18	7.2	15	23	38.2	953	5,700	8.8	1,150	0.30	-
PNR-8	10/27/2008	16:15	8.976	9.61	0.99	7.08	-	-	432	527	450	< 4	1,610	2,490	332	-	0.6	0.08	7.2	14	26.6	29.5	740	5,050	7.22	1,130	0.30	-
PNR-8	04/19/2009	14:15	7.005	8.99	1.62	6.90	-	-	407	496	439	< 4	1,520	2,490	338	-	0.5	< 0.05	7.1	16	23.1	23.0	680	4,370	7.3	1,260	0.30	-
PNR-8	10/04/2009	15:00	8.173	10.22	0.52	6.75	-	-	416	508	462	< 4	2,010	2,510	330	-	0.6	< 0.01	7.1	14	24.5	28	754	4,710	7.65	934	0.30	-
PNR-8	04/19/2010	8:25	7.769	10.19	0.58	6.75	-	-	409	499	461	< 4	2,170	2,570	345	-	0.5	0.01	7.0	14	27.1	30	788	5,140	7.86	1,020	0.30	-
PNR-8	09/22/2010	13:10	8.472	10.56	0.79	6.97	-	-	407	496	478	< 4	2,190	2,610	343	-	0.6	1.07	7.3	16	24.6	26.3	874	5,020	8.33	945	0.30	-
PNR-8	05/04/2011	10:10	3.582	9.84	1.27	6.91	-	-	419	511	311	< 4	1,520	2,450	406	-	0.2	3.37	7.2	24	15.8	18.5	597	4,890	6.36	1,360	0.30	-
PNR-8	09/23/2011	11:13	8.483	10.98	1.22	6.49	5,556	-	-	-	-	-	2,910	-	-	-	-	-	-	-	-	-	-	6,500	-	-	-	-
PNR-8	05/18/2012	9:05	7.668	9.93	0.26	6.90	5,041	-	-	-	-	-	4,440	-	-	-	-	-	-	-	-	-	-	8,400	-	-	-	-
PNR-8	10/11/2012	9:54	9.471	11.08	3.80	7.03	6,841	-	-	-	-	-	2,640	-	-	-	-	-	-	-	-	-	-	5,820	-	-	-	-
PNR-8	05/12/2013	8:41	2.946	10.53	-	7.44	1,915	45.3	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	2,560	-	-	-	-
PNR-8	07/04/2013	8:05	2.630	11.17	8.04	7.19	1,709	-161.8	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	2,380	-	-	-	-
PNR-8	09/29/2013	10:15	3.371	11.02	0.47	7.34	2,191	-33.1	-	-	-	-	455	-	-	-	-	-	-	-	-	-	-	2,800	-	-	-	-
PNR-8 Dup	09/29/2013	10:15	-	-	-	-	-	-	-	-	-	-	463	-	-	-	-	-	-	-	-	-	-	2,820	-	-	-	-
PNR-9	06/01/2000	10:10	9.7	11.40	-	9.10	-	-108.0	263	321	583	< 1	3,060	2,920	355	-	-	< 0.05	7.3	16	-	-	887	5,700	9.31	609	-	35.4
PNR-9	08/09/2001	9:35	10.11	10.50	-	7.40	-	-	305	372	637	< 1	3,360	3,150	378	-	1.6	< 0.05	7.1	18	17.3	-	985	7,940	9.66	760	-	-
PNR-9	08/16/2001	13:45	-	10.90	-	7.60	-	-	274	334	663	< 1	3,620	3,350	412	-	1.2	< 0.05	7.2	17	15.8	-	1,050	8,020	9.9	639	-	-
PNR-9	11/07/2001	14:30	4.5	9.40	-	7.70	-	-	263	321	691	< 1	3,640	3,450	420	-	1.7	< 0.05	7.0	20	-	29.2	1,060	7,630	10.3	740	-	-
PNR-9	02/20/2002	14:50	10.2	10.70	-	7.24	-	-	281	343	689	< 4	3,700	3,420	413	-	1.8	< 0.05	6.8	30	32	-	1,110	7,300	11.7	629	-	-
PNR-9	05/22/2002	10:15	11.9	12.60	-	7.32	-	-	274	334	607	< 4	4,330	3,060	375	-	1.8	< 0.05	7.0	18	25	-	1,030	8,580	11.3	510	0.17	-
PNR-9	08/20/2002	16:20	11.1	12.70	-	7.20	-	-	251	306	670	< 4	4,060	3,460	434	-	1.8	< 0.05	7.0	16	15	24	1,000	9,120	11.9	690	0.18	-
PNR-9	11/05/2002	14:05	11.47	10.90	-	7.50	-	-	270	330	704	< 4	4,000	3,470	417	-	1.9	< 0.05	7.1	18	14	25	1,030	8,340	12.1	757	0.19	-
PNR-9	03/04/2003	16:00	11.16	9.30	-	7.37	-	-	252	308	756	< 4	3,920	3,620	421	-	1.9	< 0.05	6.8	20	16	36	1,110	7,880	12.8	720	0.20	-
PNR-9	05/27/2003	18:15	10.5	12.70	-	7.16	-	-	271	330	735	< 1	3,790	3,620	434	-	1.8	< 0.05	6.9	19	16	54	1,070	8,530	13	711	0.22	-
PNR-9	08/13/2003	10:35	11.74	14.90	-	7.82	-	-	257	314	718	< 1	4,580	3,530	421	-	1.9	< 0.05	6.8	19	16	22	1,110	8,850	10.9	571	0.17	-
PNR-9	11/04/2003	14:35	10.06	10.00	-	6.93	-	-	262	319	696	< 4	4,700	3,720	480	-	1.9	< 0.05	7.0	21	15	22	1,210	8,280	11.6	663	0.22	-
PNR-9	06/08/2004	13:35	-	11.50	-	7.56	-	-	1030	1,260	783	< 4	4,340	3,880	467	-	2.1	< 0.05	7.1	20	16.3	19.1	1,350	9,660	12.2	842	0.21	-
PNR-9	09/14/2004	11:00	12	11.30	-	7.67	-	-	276	337	835	< 4	4,210	4,070	483	-	2.3	< 0.05	7.0	20	17.5	21.4	1,220	10,600	13.3	752	0.26	-
PNR-9	11/16/2004	16:12	17.3	10.00	-	7.36	-	-	254	310	848	< 4	4,480	4,110	485	-	2.1	< 0.05	6.9	23	18.8	19.9	1,270	9,140	13.6	769	0.28	-
PNR-9	03/01/2005	12:10	13	9.30	-	7.33	-	-	280	341	827	< 4	4,450	4,080	490	-	2.1	< 0.05	7.1	24	19	19	1,430	9,590	13.4	767	0.22	-
PNR-9	05/24/2005	17:25	13.81	10.20	-	7.23	-	-	237	289	886	< 4	4,580	4,390	528	-	2.2	< 0.05	7.0	19	21.6	21.7	1,490	10,200	13.6	908	0.32	-
PNR-9	08/16/2005	12:00	13.55	9.90	-	7.27	-	-	274	334	852	< 4	4,540	4,190	502	-	2.1	< 0.05	7.1	16	17.4	17.4	1,300	10,300	13.9	779	0.26	-
PNR-9	11/15/2005	15:55	14.5	10.10	-	7.28	-	-	250	305	930	< 4	4,600	4,620	557	-	2.1	< 0.05	7.2	20	18.1	21.2	1,550	9,990	14.2	766	0.12	-
PNR-9	02/08/2006	12:00	14.2	8.20	-	7.54	-	-	263	320	925	< 4	4,490	4,540	542	-	2.2	< 0.05	7.1	25	19.5	20.7	1,550	8,850	14.2	761	0.24	-
PNR-9	05/23/2006	13:15	12	10.00	-	7.32	-	-	252	307	863	< 4	4,990	4,260	511	-	2.3	< 0.05	7.4	24	18	22	1,520	9,800	14.5	831	0.17	-
PNR-9	08/23/2006	9:40	16.12	10.20	0.39	7.29	-	-	246	300	904	< 4	4,760	4,480	539	-	2.2	< 0.05	6.8	22	19	20.4	1,550	10,800	15.1	823	0.15	-
PNR-9	12/06/2006	15:00	14.08	9.12	-	7.47	-	-	253	308	895	< 4	4,620	4,420	530	-	2.5	< 0.05	7.0	23	17.3	23.2	1,600	10,000	15.2	855	0.20	-
PNR-9	03/13/2007	16:35	14.45	9.53	0.26	7.24	-	-	247	302	890	< 4	4,570	4,360	520	-	2.5	< 0.05	6.9	29	80	-	1,590	10,700	15.3	699	0.17	-
PNR-9	10/04/2007	10:40	18.15	10.70	-	7.20	-	-	248	303	919	< 4	5,200	4,510	539	-	3.0	< 0.05	6.8	21	17	51	1,670	11,300	16.2	889	0.2	-
PNR-9	03/27/2008	13:40	15.07	9.48	0.14	7.13	-	-	260	318	869	< 4	5,040	4,230	501	-	2.3	< 0.05	7.0	18	18	19.6	1,640	9,620	15.3	860	0.20	-
PNR-9	10/23/2008	17:00	15.69	9.62	0.30	7.24	-	-	256	312	947	< 4	5,110	4,640	553	-	2.6	< 0.05	7.0	18	17	23.1	1,720	10,400	15.7	939	0.20	-
PNR-9	04/18/2009	16:20	16.13	10.40	0.41	6.96	-	-	256	312	847	< 4	4,720	4,140	491	-	2.5	< 0.05	6.9	22	15.4	17.0	1,620	9,710	15.7	909	0.20	-
PNR-9	10/03/2009	13:40	16.03	9.46	0.23	6.93	-	-	264	322	926	< 4	5,440	4,470	524	-	2.4	< 0.01	6.8	23	18.1	24	1,740	10,200	15.3	732	0.20	-
PNR-9	04/13/2010	18:00	15.20	9.28	0.49	7.06	-	-	249	304	885	< 4	5,690	4,310	509	-	2.5	< 0.01	6.9	25	16.6	20	1,900	11,500	15.7	714	0.20	-
PNR-9	09/20/2010	15:40	20.80	9.89	0.54	7.10	-	-	256	313	918	< 4	5,330	4,280	482	-	2.5	0.02	6.9	25	15.8	22.2	1,810	12,200	15.6	699	0.20	-
PNR-9	05/05/2011	17:10	14.88	9.23	0.50	6.98	-	-	291	354	839	< 4	5,160	4,080	482	-	2.3	0.02	6.9	22	22	38.1	1,830	10,900	13.7	1,030	0.20	-
PNR-9	09/20/2011	10:54	15.71	9.79	0.86	7.14	10,210	-	-	-	-	-	5,480	-	-	-	-	-	-	-	-	-	-	10,300	-	-	-	-
PNR-9	10/10/2012	15:02	21.4	9.70	1.025	7.10	13,920	-	-	-	-	-	5,820	-	-	-	-	-	-	-	-	-	-	10,600	-	-	-	-
PNR-9 Dup	10/10/2012	15:02	-	-	-	-	-	-	-	-	-	-	5,850	-	-	-	-	-	-	-	-	-	-	12,200	-	-	-	-
PNR-9	09/26/2013	14:15	16.77	9.67	0.11	6.97	10,907	-117.3	-	-	-	-	5,670	-	-	-	-	-	-	-	-	-	-	10,900	-	-	-	-
PNR-10	06/01/2000	8:45	3.2	10.50	-	8.90	-	-93.3	528	645	208	< 1	147	978	111	-	-	< 0.05	7.6	8	-	-	435	2,480	3.12	1,210	-	12.1
PNR-10	08/08/2001	18:50	3.7	11.40	-	7.40	-	-	571	697	230	< 1	245	1,090	127	-	1.2	< 0.05	7.2	8	24.3	-	449	2,890	3.49	1,260	-	-
PNR-10	08/16/2001	13:15	-	11.30	-	7.70	-	-	550	672	229	< 1	263	1,100	128	-	1.2	< 0.05	7.2	8	28.3	-	482	2,900	3.45	1,320	-	-
PNR-10	11/07/2001	12:30	-	9.40	-	-	-	-	528	644	217	< 1	196	1,040	121	-	1.2	0.08	7.4	10	-	38.9	443	2,690	3.19	1,220	-	-
PNR-10	02/20/2002	13:38	2.4	10.30	-	7.27	-	-	578	705	230	< 4	304	1,110	131	-	1.2	< 0.05	7.0	8	30.1	-	448	2,920	3.85	1,340	-	-
PNR-10	05/21/2002	13:35	3.82	11.60	-	7.31	-	-	535	653	214	< 4	415	1,040	124	-	1.3	< 0.05	7.2	8	30.6	-	430	2,810	3.79	1,680	0.22	-
PNR-10	08/20/2002	12:20	3.4	13.10	-	7.20	-	-	512	624	230	< 4	351	1,150	139	-	1.3	0.07	7.2	7	23.4	31.2	407	3,090	4.02	1,350	0.25	-
PNR-10	11/05/2002	13:30	3.9	11.00	-	7.47	-	-	524	639	263	< 4	384	1,250	145	-	1.4	< 0.05	7.2	11	24	30.7	581	3,130	4.11	1,380	0.25	-
PNR-10	03/04/2003	16:50	3.84	9.20	-	7.34	-	-	540	658	268	< 4	426	1,270	150	-	1.3	< 0.05	7.0	9	23.8	51.9	470	3,180	4.33	1,340	0.30	-
PNR-10	05/27/2003	17:45	3.6	12.40	-	7.30	-	-	516	630	268	< 1	434	1,310	155	-	1.2	< 0.05	7.1	9	24.8	29.2	476	3,230	4.39	1,350	0.28	-
PNR-10	08/13/2003	10:00	3.91	13.30	-	7.97	-	-	512	624	263	< 1	457	1,270	149	-	1.2	< 0.05	6.9	9	24.1	45	444	3,270	4.16	1,340	0.25	-
PNR-10	11/04/2003	13:45	3.6	10.20	-	7.87	-	-	512	624	240	< 4	512	1,270	162	-	1.4	< 0.05	7.2	9	24.5	28.3	468	3,310	3.85	1,420	0.28	-
PNR-10	06/08/2004	14:10	-	11.50	-	7.51	-	-	493	602	284	< 4	561	1,410	170	-	1.4	< 0.05	7.2	9	23.9	56	524	3,390	4.18	1,410	0.27	-
PNR-10	09/14/2004	11:40	4	11.50	-	7.51	-	-	519	633	300	< 4	607	1,490	180	-	1.8	< 0.05	7.2	10	25.6	31.0	508	3,510	4.62	1,350	0.27	-
PNR-10	11/16/2004	11:28	5.7	10.60	-	7.30	-	-	504	615	316	< 4	602	1,540	181	-	1.5	< 0.05	7.2	10	26.2	29.1	502	3,430	4.63	1,360	0.28	-
PNR-10	03/01/2005	11:06	4.46	9.60	-	7.28	-	-	524	640	315	< 4	653	1,570	191	-	1.4	< 0.05	7.1	12	26.7	28.3	571	3,560	4.67	1,370	0.27	-
PNR-10	05/24/2005	15:50	4.76	10.80	-	7.16	-	-	442	540	300	< 4	645	1,500	181	-	1.6	< 0.05	7.2	11	25.4	25.3	558	3,610	4.75	1,260	0.31	-
PNR-10	08/16/2005	10:48	4.63	9.90	-	7.17	-	-	522	637	327	< 4	688	1,630	197	-	1.4	< 0.05	7.2	7	25.2	26.4	495	3,660	4.87	1,360	0.26	-
PNR-10	11/15/2005	11:45	4.89	8.90	-	6.35	-	-	460	561	356	< 4	758	1,800	220	-	1.4	< 0.05	7.2	8	25.9	28	585	3,730	5.1	1,400	0.24	-
PNR-10	02/07/2006	14:00	4.6	10.20	-	7.22	-	-	498	607	355	< 4	708	1,740	208	-	1.5	< 0.05	7.1	11	27.9	29.4	582	3,730	5.1	1,300	0.25	-
PNR-10	05/23/2006	12:15	4.2	10.00	-	7.23	-	-	480	585	352	< 4	834	1,740	209	-	1.7	< 0.05	7.8	11	26.7	32.2	597	3,790	5.14	1,430	0.24	-
PNR-10	08/23/2006	10:35	5.62	10.10	0.3	7.20	-	-	452	551	354	< 4	811	1,740	208	-	1.5	< 0.05	7.0	11	26.8	29.6	598	3,820	5.46	1,370	0.20	-
PNR-10	12/06/2006	14:30	5.253	9.20	-	7.40	-	-	458	559	366	< 4	790	1,770	208	-	1.8	< 0.05	7.0	12	27.2	29.6	633	3,890	14.9	1,340	0.20	-
PNR-10	03/13/2007	15:20	5.347	9.82	0.33	7.26	-	-	450	550	376	< 4	922	1,870	225	-	1.9	< 0.05	7.1	11	40.9	-	620	4,050	5.63	1,390	0.23	-
PNR-10	10/03/2007	16:30	5.751	10.14	0.12	7.08	-	-	442	540	368	< 4	984	1,840	225	-	1.7	< 0.05	7.0	10	26.1	32.2	612	4,130	6.08	1,400	0.20	-
PNR-10	03/27/2008	11:45	5.938	9.70	0.19	7.08	-	-	446	545	375	< 4	1,090	1,880	230	-	1.6	< 0.05	7.1	9	26.6	29.1	629	4,300	6	1,410	0.20	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-10	10/23/2008	14:20	6.074	9.94	0.38	7.15	-	-	439	536	394	< 4	1,010	1,970	241	-	2.0	< 0.05	7.1	10	25.8	29.4	655	4,190	5.89	1,460	0.20	-
PNR-10	04/18/2009	14:05	6.429	9.86	0.23	6.90	-	-	423	516	415	< 4	1,060	2,090	256	-	2.0	< 0.05	7.1	12	25.5	28.0	676	3,910	6.3	1,390	0.20	-
PNR-10	10/03/2009	11:35	6.645	9.83	0.3	6.79	-	-	421	513	432	< 4	1,290	2,140	257	-	2.0	< 0.01	7.0	11	26	29	660	4,550	6.3	1,320	0.20	-
PNR-10	04/13/2010	15:46	6.480	9.59	0.53	6.99	-	-	420	512	410	< 4	1,430	2,090	258	-	1.7	< 0.01	7.0	12	25.4	36	737	4,680	6.59	1,440	0.20	-
PNR-10	09/20/2010	12:30	8.697	9.76	0.87	6.85	-	-	414	505	408	< 4	1,350	2,050	250	-	1.8	0.03	7.0	11	23.6	30.4	712	4,820	6.59	1,330	0.20	-
PNR-10	05/05/2011	16:00	6.930	9.43	0.34	6.75	-	-	430	524	423	< 4	1,480	2,160	268	-	1.7	< 0.01	7.0	12	28	36.4	746	4,960	6.35	1,560	0.20	-
PNR-10	09/22/2011	12:09	8.168	9.72	0.29	6.62	5,307	-	-	-	-	-	1,600	-	-	-	-	-	-	-	-	-	-	5,270	-	-	-	-
PNR-10	10/13/2012	13:46	7.303	9.58	0.14	6.86	4,748	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-	-	-	5,060	-	-	-	-
PNR-10	09/27/2013	12:16	8.046	9.82	0.13	6.97	5,231	-214.1	-	-	-	-	2,110	-	-	-	-	-	-	-	-	-	-	5,500	-	-	-	-
PNR-10 Dup	09/27/2013	12:16	-	-	-	-	-	-	-	-	-	-	1,810	-	-	-	-	-	-	-	-	-	-	5,450	-	-	-	-
PNR-12	05/31/2000	0:00	4.5	12.10	-	6.00	-	81.2	699	853	425	< 1	78	2,410	328	-	-	95.7	7.6	17	-	-	362	4,020	4.58	2,030	-	39.3
PNR-12	08/08/2001	15:00	4.9	12.80	-	7.30	-	-	537	655	421	< 1	74	2,390	325	-	0.3	139	7.3	15	19.1	-	397	4,720	4.76	2,130	-	-
PNR-12	08/15/2001	16:00	-	13.40	-	7.40	-	-	738	900	444	< 1	72	2,570	356	-	0.3	138	7.3	16	21.1	-	381	4,610	4.6	2,050	-	-
PNR-12	11/06/2001	16:20	4.1	10.00	-	7.70	-	-	739	901	425	< 1	72	2,430	333	-	0.4	105	7.2	15	-	64.5	336	4,590	4.65	2,040	-	-
PNR-12	02/20/2002	11:55	4.6	10.80	-	7.14	-	-	735	897	375	< 4	67	2,370	349	-	0.2	145	7.2	14	36	-	373	4,700	5.11	2,170	-	-
PNR-12	05/21/2002	11:00	4.9	14.00	-	7.22	-	-	666	812	409	< 4	56	2,360	324	-	< 0.1	142	7.3	12	22	-	342	4,630	5.12	2,250	0.23	-
PNR-12	08/19/2002	16:05	4.6	12.30	-	8.80	-	-	744	908	328	< 4	68	2,070	304	-	1.1	82.9	7.4	11	20.5	88.4	298	3,990	4.54	1,830	0.30	-
PNR-12	11/05/2002	11:15	4.84	11.00	-	7.31	-	-	700	854	442	< 4	76	2,470	331	-	< 0.1	130	7.2	12	19	69	328	4,660	5.11	2,200	0.21	-
PNR-12	03/04/2003	13:10	4.6	9.60	-	7.53	-	-	684	834	407	< 4	148	2,420	340	-	< 0.1	128	7.2	15	19	139	361	4,590	4.81	2,200	0.20	-
PNR-12	05/27/2003	17:00	4.3	13.50	-	7.46	-	-	656	801	393	< 1	80	2,280	316	-	< 0.1	112	7.2	13	17	181	323	4,540	5.25	2,200	0.28	-
PNR-12	08/13/2003	8:05	4	15.60	-	8.21	-	-	685	835	415	< 1	58	2,440	341	-	< 0.1	133	7.1	11	19.9	33.1	314	4,600	4.85	2,180	0.22	-
PNR-12	11/04/2003	12:35	3.3	10.20	-	5.38	-	-	681	831	370	< 4	64	2,380	354	-	< 0.1	135	7.2	12	20.6	46.8	331	4,590	4.37	2,240	0.22	-
PNR-12	06/08/2004	9:15	-	12.90	-	7.27	-	-	691	843	402	< 4	72	2,410	342	-	< 0.1	337	7.2	11	19.4	33.8	389	4,540	4.59	2,120	0.27	-
PNR-12	09/14/2004	10:00	4.49	12.90	-	7.43	-	-	695	847	424	< 4	75	2,540	359	-	< 0.1	104	7.1	12	21	17.1	345	4,580	4.9	2,080	0.24	-
PNR-12	11/16/2004	9:35	6.1	10.20	-	7.12	-	-	649	792	453	< 4	70	2,640	366	-	< 0.1	135	7.4	12	21.8	33.8	340	4,550	4.97	2,100	0.25	-
PNR-12	02/28/2005	17:10	4.48	9.50	-	7.09	-	-	697	850	416	< 4	66	2,530	363	-	< 0.1	126	7.1	12	21.8	25.4	361	4,620	4.85	2,100	0.25	-
PNR-12	05/23/2005	18:50	4.77	10.30	-	6.94	-	-	586	716	404	< 4	65	2,420	342	-	< 0.1	130	6.9	11	20.4	24.1	354	4,540	4.8	1,980	0.27	-
PNR-12	08/15/2005	6:00	4.71	10.30	-	6.95	-	-	687	838	440	< 4	63	2,630	372	-	< 0.1	163	7.2	9	21.7	20.9	335	4,600	4.93	2,060	0.23	-
PNR-12	11/15/2005	9:45	4.8	9.70	-	7.08	-	-	617	752	444	< 4	71	2,690	384	-	< 0.1	155	7.1	9	20.3	38.5	376	4,520	5	2,170	0.21	-
PNR-12	02/07/2006	13:00	4.7	10.30	-	6.97	-	-	669	816	435	< 4	66	2,670	385	-	< 0.1	204	7.0	11	22.8	27.6	374	4,550	5	2,100	0.20	-
PNR-12	05/23/2006	10:50	4.3	10.40	-	7.00	-	-	645	787	445	< 4	72	2,710	388	-	< 0.1	197	7.9	11	21.9	26.1	376	4,400	5.02	2,200	0.21	-
PNR-12	08/22/2006	16:10	4.13	10.50	1.27	7.02	-	-	609	743	436	< 4	68	2,660	381	-	< 0.1	185	6.9	11	22.3	32.1	361	4,540	5.14	2,070	0.20	-
PNR-12	12/05/2006	15:45	5.043	9.46	-	6.92	-	-	615	750	450	< 4	69	2,650	370	-	< 0.1	187	7.0	11	22.1	30.1	361	4,700	5.3	2,120	0.20	-
PNR-12	03/14/2007	12:15	4.643	9.86	1.97	6.74	-	-	615	751	451	< 4	71	2,690	380	-	< 0.1	202	7.2	13	37.4	-	367	4,710	5.23	1,970	0.20	-
PNR-12	10/03/2007	13:00	5.91	11.30	-	7.15	-	-	587	716	409	< 4	63	2,460	349	-	< 0.1	144	7.3	8	22.0	45.3	321	4,450	5.21	2,060	0.2	-
PNR-12	03/26/2008	10:45	4.900	9.67	0.29	6.84	-	-	540	659	415	< 4	58	2,500	355	-	< 0.1	166	7.1	9	21.5	22.2	333	4,450	4.89	2,110	0.20	-
PNR-12	10/23/2008	10:40	4.697	9.76	1.33	7.06	-	-	602	735	429	< 4	68	2,580	366	-	< 0.1	125	7.1	9	22.3	36.4	360	4,440	4.94	2,110	0.20	-
PNR-12	04/20/2009	18:10	4.990	9.96	0.55	6.80	-	-	606	739	415	< 4	58	2,490	354	-	< 0.1	157	7.1	10	21.5	23.0	336	3,860	4.9	2,100	0.20	-
PNR-12	10/03/2009	10:45	4.842	9.92	1.58	6.81	-	-	591	721	416	< 4	58	2,490	351	-	< 0.1	107	7.2	10	23.3	27	335	4,170	4.69	1,990	0.20	-
PNR-12	04/14/2010	11:35	4.543	9.66	0.38	6.85	-	-	581	709	390	< 4	50	2,370	338	-	< 0.05	134	7.1	10	21.4	22	347	4,320	4.85	2,030	0.20	-
PNR-12	09/16/2010	14:50	4.805	9.93	0.96	6.83	-	-	597	728	430	< 4	51	2,540	356	-	< 0.05	164	7.4	10	21.9	26.6	346	4,420	4.77	2,010	0.20	-
PNR-12	05/03/2011	18:00	4.74	10.13	1.78	6.71	-	-	605	738	339	< 4	57	2,240	339	-	0.1	142	7.2	11	23	71.6	342	4,490	4.88	2,150	0.20	-
PNR-12	09/19/2011	15:58	5.301	9.20	0.55	6.50	3,445	-	-	-	-	-	56	-	-	-	-	-	-	-	-	-	-	4,450	-	-	-	-
PNR-12	05/16/2012	13:47	4.063	10.13	1.70	6.70	2,647	-	-	-	-	-	61	-	-	-	-	-	-	-	-	-	-	4,130	-	-	-	-
PNR-12	10/11/2012	17:38	4.817	8.19	0.81	6.76	3,132	133.9	-	-	-	-	57	-	-	-	-	-	-	-	-	-	-	4,320	-	-	-	-
PNR-12	05/07/2013	17:44	4.840	9.82	0.17	7.00	3,140	-131.8	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	4,440	-	-	-	-
PNR-13	08/15/2001	18:15	21.25	14.50	-	7.50	-	-	372	453	1,050	< 1	12,300	4,870	546	-	6.0	1.12	7.3	31	18.9	-	6,050	22,200	27.3	862	-	-
PNR-13	08/15/2001	19:00	21.25	14.50	-	7.50	-	-	375	457	984	< 1	11,500	4,480	492	-	5.1	1.46	7.2	42	20.1	-	5,710	21,200	25.6	841	-	-
PNR-13	11/07/2001	13:35	-	9.40	-	7.40	-	-	424	517	529	< 1	3,420	2,540	296	-	2.1	0.37	7.1	26	-	26.4	1,610	7,780	10.9	1,360	-	-
PNR-13	02/19/2002	16:30	7.7	9.50	-	7.09	-	-	559	682	474	< 4	2,220	2,310	273	-	1.2	< 0.05	7.0	17	32	-	1,250	6,720	9.42	1,810	-	-
PNR-13	05/22/2002	14:00	6.82	11.00	-	7.20	-	-	508	619	418	< 4	1,040	2,070	249	-	1.2	< 0.05	7.4	14	29	-	680	5,120	6.25	2,270	0.32	-
PNR-13	08/20/2002	15:45	4.4	13.30	-	6.90	-	-	444	541	408	< 4	679	2,080	257	-	1.4	< 0.05	7.2	12	24	30	588	4,530	5.57	2,000	0.36	-
PNR-13	11/05/2002	15:30	4.9	9.90	-	7.09	-	-	511	623	386	< 4	769	1,900	227	-	1.3	< 0.05	7.2	14	22	30	493	4,110	5.27	1,730	0.37	-
PNR-13	03/04/2003	11:15	4.4	9.30	-	7.48	-	-	485	592	384	< 4	592	1,880	224	-	1.2	< 0.05	7.1	11	22.9	37	437	3,950	4.74	1,810	0.40	-
PNR-13	05/28/2003	10:05	4.64	12.20	-	7.10	-	-	501	612	386	< 1	517	1,910	230	-	1.1	< 0.05	7.2	14	24	28	471	3,940	5.13	1,770	0.49	-
PNR-13	08/13/2003	10:20	3.4	11.10	-	7.37	-	-	518	632	305	< 1	690	1,550	193	-	1.1	< 0.05	7.1	11	23.3	29.3	374	3,570	4.29	1,180	0.33	-
PNR-13	11/04/2003	14:15	6.8	10.10	-	7.27	-	-	541	661	322	< 4	1,200	1,720	223	-	1.5	< 0.05	7.2	14	23.7	26	772	4,630	5.61	1,600	0.35	-
PNR-13	06/08/2004	15:30	3.67	11.00	-	7.37	-	-	560	683	316	< 4	860	1,620	201	-	1.6	< 0.05	7.1	11	23.1	27.4	667	4,190	5.64	1,580	0.37	-
PNR-13	09/14/2004	10:00	3.6	11.10	-	7.67	-	-	542	662	307	< 4	565	1,550	190	-	1.4	0.05	7.2	11	25.8	25.9	350	3,150	4.13	1,180	0.36	-
PNR-13	11/16/2004	15:30	4.9	12.90	-	7.13	-	-	532	649	326	< 4	624	1,650	202	-	1.3	< 0.05	7.2	13	25.2	30.8	520	3,480	4.65	1,360	0.35	-
PNR-13	03/01/2005	13:25	3.8	10.00	-	7.16	-	-	537	655	308	< 4	447	1,570	196	-	1.1	< 0.05	7.1	12	27	28.1	370	3,110	3.92	1,270	0.37	-
PNR-13	05/24/2005	12:00	4.6	11.40	-	7.08	-	-	476	581	292	< 4	470	1,510	189	-	1.3	< 0.05	7.1	12	24	29.7	488	3,610	4.47	1,410	0.39	-
PNR-13	08/17/2005	9:40	4.1	14.40	-	7.01	-	-	489	597	303	< 4	541	1,550	193	-	1.2	0.39	7.3	9	25.5	62.6	383	3,440	4.49	1,330	0.36	-
PNR-13	11/16/2005	10:50	4.8	9.70	-	6.68	-	-	507	618	337	< 4	500	1,780	227	-	1.2	< 0.05	7.3	10	26.8	55.3	565	3,840	4.7	1,690	0.34	-
PNR-13	02/08/2006	10:40	5	9.30	-	7.32	-	-	539	657	321	< 4	410	1,690	216	-	1.3	< 0.05	7.3	11	27.9	29	535	3,750	4.6	1,620	0.33	-
PNR-13	05/24/2006	13:15	3.1	16.50	-	7.08	-	-	510	623	318	< 4	385	1,680	215	-	1.2	< 0.05	7.9	11	27.7	31.1	480	3,240	4.33	1,630	0.34	-
PNR-13	08/22/2006	14:25	4.31	11.80	0.88	7.15	-	-	502	612	325	< 4	437	1,760	231	-	1.3	< 0.05	7.0	11	24.9	29.1	620	3,880	5.1	1,770	0.33	-
PNR-13	12/06/2006	11:30	4.969	6.98	2.61	7.40	-	-	508	619	334	< 4	769	1,800	235	-	1.4	< 0.05	7.3	11	23.8	29.6	723	4,430	6.1	1,780	0.30	-
PNR-13	03/14/2007	16:20	3.8	9.40	-	7.37	-	-	504	615	318	< 4	407	1,700	220	-	1.5	< 0.05	7.2	10	37.8	-	546	3,790	4.82	1,670	0.32	-
PNR-13	10/04/2007	17:30	4.076	10.15	0.48	7.02	-	-	499	608	308	< 4	347	1,630	210	-	1.2	< 0.05	7.2	9	25.6	36.5	495	3,750	4.8	1,740	0.30	-
PNR-13	03/27/2008	15:00	4.091	9.67	0.30	7.05	-	-	485	592	313	< 4	319	1,630	206	-	1.2	< 0.05	6.9	10	27.3	30	423	3,430	4.21	1,630	0.30	-
PNR-13	10/25/2008	14:30	4.044	9.69	0.93	7.17	-	-	486	593	309	< 4	306	1,640	211	-	1.5	< 0.05	7.3	9	25.8	40	455	3,490	4.31	1,720	0.40	-
PNR-13	04/18/2009	17:55	3.992	11.84	0.62	6.90	-	-	462	564	326	< 4	235	1,690	213	-	1.3	< 0.05	7.3	11	25.5	37.0	423	3,080	4.3	1,720	0.40	-
PNR-13	10/06/2009	10:50	3.811	9.61	0.8	6.89	-	-	466	568	331	< 4	244	1,710	213	-	1.4	< 0.05	7.2	10	25.5	27	419	3,380	4.09	1,590	0.30	-
PNR-13	04/16/2010	17:40	3.486	9.85	0.46	6.88	-	-	446	544	338	< 4	225	1,820	238	-	1.1	< 0.01	7.2	11	23	26	521	4,170	4.65	2,040	0.40	-
PNR-13	09/17/2010	11:15	3.706	8.62	1.05	6.96	-	-	452	551	328	< 4	181	1,650	201	-	1.1	0.02	7.2	12	24.8	33.2	376	3,340	3.9	1,560	0.30	-
PNR-13	05/05/2011	11:30	3.321	9.91	0.60	6.68	-	-	474	578	332	< 4	166	1,660	202	-	1.0	0.63	7.3	13	21.9	22.8	335	3,370	3.76	1,890	0.30	-
PNR-13	09/21/2011	10:28	3.755	11.20	3.55	6.57	2,441	-	-	-	-	-	134	-	-	-	-	-	-	-	-	-	-	2,900	-	-	-	-
PNR-13	05/16/2012	17:25	2.977	10.36	1.20	7.43	1,934	-	-	-	-	-	106	-	-	-	-	-	-	-	-	-	-	3,430	-	-	-	-
PNR-13	10/12/2012	9:34	3.412	8.06	0.91	6.57	2,219	73.9	-	-	-	-	179	-	-	-	-	-	-	-	-	-	-	3,370	-	-	-	-
PNR-13	05/09/2013	8:58	3.497	9.70	1.04	7.13	2,277	-115.2	-	-	-	-	82	-	-	-	-	-	-	-	-	-	-	3,300	-	-	-	-
PNR-13	09/26/2013	9:31	3.412	9.90	0.39	7.01	2,218	-73.7	-	-	-	-	84	-	-	-	-	-	-	-	-	-	-	3,360	-	-	-	-
PNR-14	08/09/2001	16:00	96.6	42.60	-	6.40	-	-	321	391	1,390	< 1	44,200	5,110	397	-	23.8	< 0.05	6.5	327	30.7	-	23,100	70,000	80.5	1,460	-	-
PNR-14	08/14/2001	9:45	96.9	39.70	-	6.60	-	-	294	358	1,430	< 1	44,300	5,190	394	-	24.0	< 0.05	6.6	310	30.8	-	23,200	69,700	74.3	1,330	-	-
PNR-14	11/07/2001	14:35	-	45.60	-	6.40	-	-	340	415	1,690	< 1	40,900	6,370	519	-	28.1	< 0.05	6.3	170	-	37.3	22,200	67,400	51.1	1,490	-	-
PNR-14	02/21/2002	11:30	91.4	41.20	-	6.09	-	-	372	454	1,570	< 4	43,100	5,910	483	-	29.8	< 0.05	6.6	249	25	-	22,700	64,200	60.4	1,300	-	-
PNR-14	05/22/2002	12:05	90.2	42.50	-	6.26	-	-	338	412	1,260	< 4	39,700	4,630	358	-	22.2	< 0.05	6.4	282	42	-	22,000	67,200	66.7	1,730	0.35	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-14	08/20/2002	17:45	87.8	40.00	-	6.10	-	-	325	397	1,250	< 4	39,900	4,800	407	-	18.5	< 0.05	6.5	133	30	29	21,200	66,300	68.5	1,510	0.32	-
PNR-14	11/06/2002	11:28	105.5	40.90	-	6.30	-	-	295	360	1,410	< 4	35,300	5,210	412	-	18.4	< 0.05	6.6	368	22	33	21,500	65,400	57.5	1,590	0.30	-
PNR-14	03/04/2003	17:15	91.8	35.70	-	6.42	-	-	281	343	1,390	< 4	40,200	5,050	384	-	17.5	< 0.05	6.4	355	29	42	20,800	65,200	47.4	1,650	0.30	-
PNR-14	05/28/2003	11:45	64.7	40.20	-	6.44	-	-	314	383	1,280	< 1	33,300	4,940	426	-	15.1	< 0.05	6.5	343	29	30	19,300	60,600	84.1	1,460	0.34	-
PNR-14	08/13/2003	15:43	78.2	39.70	-	6.36	-	-	306	373	1,300	< 1	37,400	4,860	394	-	17.0	< 0.05	6.4	370	30	31	20,700	62,800	82.2	1,030	0.30	-
PNR-14	11/05/2003	11:45	83.3	38.50	-	5.79	-	-	331	404	1,170	< 4	26,400	5,370	596	-	6.3	< 0.05	6.5	214	39	46	12,400	43,300	31	1,210	0.38	-
PNR-14	03/17/2004	10:45	96.8	38.80	-	6.05	-	-	377	460	1,110	< 1	30,300	4,400	397	-	12.7	< 0.05	6.7	314	35	32	16,800	49,300	70.4	1,080	0.36	-
PNR-14	06/09/2004	10:40	66.4	38.20	-	6.62	-	-	384	469	827	< 4	28,100	3,230	283	-	11.8	< 0.05	6.6	241	27	30	14,500	45,500	68.5	1,400	0.41	-
PNR-14	09/14/2004	15:35	62.5	36.40	-	7.80	-	-	412	503	748	[3] < 4	25,000	[2] 3,000	275	[3] -	11.1	< 0.05	6.8	263	34	[3] 34	[2] 13,800	[2] 39,800	60	1,300	[3] 0.40	-
PNR-14	11/17/2004	15:30	65.5	36.00	-	6.88	-	-	405	495	741	< 4	19,300	2,970	271	-	9.1	< 0.05	6.7	242	30	32	11,700	36,200	55.6	1,140	0.43	-
PNR-14	03/02/2005	10:50	42.5	40.70	-	6.59	-	-	472	576	617	< 4	16,500	2,600	257	-	7.7	< 0.05	6.8	175	31	30	10,400	29,700	45.5	1,480	0.45	-
PNR-14	05/25/2005	9:46	41.2	34.50	-	6.63	-	-	453	553	568	< 4	13,600	2,440	248	-	6.8	< 0.05	6.9	178	30	67	8,840	25,200	38.1	2,110	0.53	-
PNR-14	08/17/2005	15:18	34.9	33.50	-	6.72	-	-	591	721	528	< 4	11,100	2,390	260	-	6.2	< 0.05	7.0	125	30	28	6,900	21,400	33	2,270	0.50	-
PNR-14	11/16/2005	11:05	43.1	31.90	-	6.66	-	-	541	660	663	< 4	10,800	3,170	368	-	5.6	< 0.05	7.1	173	37	37	6,850	20,100	31.7	2,040	0.36	-
PNR-14	02/09/2006	14:35	31.6	30.80	-	6.73	-	-	624	761	566	< 4	9,060	2,730	321	-	5.4	< 0.05	7.0	145	34	32	5,650	18,700	28.6	2,140	0.34	-
PNR-14	05/24/2006	17:00	25.74	32.01	-	6.49	-	-	615	751	570	< 4	9,220	2,790	331	-	6.1	< 0.05	7.6	121	34	35	5,530	17,600	27.4	2,080	0.42	-
PNR-14	08/23/2006	16:20	26.07	32.03	0.06	6.44	-	-	605	738	525	< 4	8,220	2,640	322	-	4.3	< 0.05	6.9	105	34	35	4,930	16,700	26.9	2,060	0.40	-
PNR-14	12/07/2006	15:30	19.20	27.90	-	7.08	-	-	633	772	523	< 4	7,230	2,640	324	-	4.4	< 0.05	6.9	91	32	32	4,530	15,600	24.5	2,080	0.40	-
PNR-14	03/14/2007	10:45	26.10	28.40	-	6.59	-	-	643	785	514	< 4	6,590	2,780	362	-	4.0	< 0.05	6.8	96	96.8	-	4,440	14,600	23.2	1,890	0.40	-
PNR-14	10/04/2007	16:50	20.20	28.70	-	6.53	-	-	673	821	478	[3] < 4	6,290	[2] 2,640	351	[3] -	3.1	< 0.05	6.7	76	[3] 30	[3] 35	[2] 3,560	[2] 13,500	21.7	2,100	[3] 0.4	-
PNR-14	[14] 03/27/2008	13:15	19.20	28.60	-	6.76	-	-	693	846	475	[3] < 4	5,880	[2] 2,650	356	[3] -	2.9	< 0.05	6.8	70	[3] 33	[3] 30.8	[2] 3,530	[2] 12,800	20	1,930	[3] 0.40	-
PNR-14	[14] 10/27/2008	11:30	17.76	26.35	0.17	6.73	-	-	699	853	488	< 4	5,200	2,770	377	-	9.2	0.06	7.0	68	31	32.6	3,390	11,800	18.2	2,030	0.50	-
PNR-14	[14] 04/16/2009	14:00	16.56	25.43	0.13	6.69	-	-	694	847	407	< 4	4,450	[2] 2,310	315	-	2.2	< 0.05	7.2	59	27.9	[3] 31.0	[2] 2,840	[2] 10,400	16.7	1,810	[3] 0.50	-
PNR-14	[14] 10/02/2009	11:00	16.48	25.06	0.2	6.63	-	-	692	845	435	< 4	4,890	2,550	355	-	2.0	< 0.01	7.0	55	30.7	31	2,790	10,600	16.6	1,420	0.60	-
PNR-14	[14] 04/15/2010	14:00	17.27	23.92	0.59	6.87	-	-	690	841	434	< 4	5,070	[2] 2,430	327	-	2.2	[3] < 0.01	6.9	54	28.5	[3] 28	[2] 2,900	[2] 10,600	16.4	1,440	[3] 0.50	-
PNR-14	[14] 09/20/2010	14:50	20.71	23.01	0.54	6.71	-	-	695	847	464	< 4	4,500	[2] 2,540	336	-	2.4	[3] < 0.01	6.9	53	31.3	[3] 32.6	[2] 2,930	[2] 10,500	15.7	1,290	[3] 0.50	-
PNR-14	[14] 05/06/2011	10:30	14.75	22.02	1.08	6.68	-	-	750	915	438	< 4	4,220	2,430	324	-	1.2	< 0.01	6.9	49	34.2	31.8	2,620	10,200	14	1,770	0.50	-
PNR-14	[14] 09/20/2011	9:14	12.96	20.54	0.81	6.67	8,427	-	-	-	-	-	3,430	[2] -	-	-	-	-	-	-	-	-	-	8,270	-	-	-	-
PNR-14	[14] 05/16/2012	14:10	12.84	20.13	0.24	6.69	8,343	-	-	-	-	-	3,110	-	-	-	-	-	-	-	-	-	-	7,510	-	-	-	-
PNR-14	[14] 10/10/2012	14:15	11.16	19.47	0.90	6.79	7,254	-	-	-	-	-	2,650	[2] -	-	-	-	-	-	-	-	-	-	7,840	-	-	-	-
PNR-14	[14] 05/07/2013	18:46	10.66	18.88	0.29	6.68	6,925	186.7	-	-	-	-	2,280	[2] -	-	-	-	-	-	-	-	-	-	7,330	-	-	-	-
PNR-14	[14] 09/25/2013	17:37	9.21	18.28	0.26	6.63	5,995	16.7	-	-	-	-	1,860	[2] -	-	-	-	-	-	-	-	-	-	6,590	-	-	-	-
PNR-15	08/10/2001	8:15	94.6	80.10	-	7.40	-	-	162	197	950	< 1	43,500	3,370	243	-	14.4	< 0.05	7.4	440	41.9	-	22,700	66,100	79.3	1,470	-	-
PNR-15	08/14/2001	13:00	97.2	80.10	-	7.10	-	-	288	351	1,170	< 1	40,800	4,060	277	-	15.4	< 0.05	7.0	480	47.6	-	25,200	66,000	72.9	1,650	-	-
PNR-15	11/08/2001	9:10	102	81.70	-	6.20	-	-	369	450	950	< 1	37,400	3,340	237	-	15.6	0.08	6.7	382	-	50.1	21,300	62,400	49.4	1,430	-	-
PNR-15	02/21/2002	14:54	104.5	64.70	-	6.24	-	-	338	412	991	< 4	45,500	3,430	232	-	15.7	0.06	6.8	462	70	-	22,700	68,100	62.4	1,420	-	-
PNR-15	05/22/2002	14:55	106.9	67.20	-	6.41	-	-	330	402	951	< 4	43,000	3,300	226	-	14.9	< 0.05	6.6	398	61	-	21,900	68,800	69.1	2,300	0.33	-
PNR-15	08/21/2002	14:00	101.7	60.50	-	6.40	-	-	346	423	1,110	< 4	46,200	3,800	250	-	15.4	0.07	6.8	385	38	43	22,100	70,100	72.7	1,840	0.38	-
PNR-15	11/06/2002	14:35	112.6	56.50	-	6.43	-	-	325	396	1,010	< 4	37,400	3,480	235	-	15.4	< 0.05	6.8	420	27	42	21,700	67,800	60.4	1,750	0.31	-
PNR-15	03/05/2003	12:30	107	55.50	-	7.17	-	-	324	395	1,090	< 4	39,300	3,680	278	-	14.2	< 0.05	6.6	403	35	34	24,800	64,600	46.8	1,730	0.40	-
PNR-15	05/28/2003	15:35	90.9	52.70	-	6.42	-	-	331	403	1,060	< 1	38,600	3,810	282	-	13.1	< 0.05	6.7	432	32	33	22,200	65,400	90.1	1,380	0.39	-
PNR-15	08/14/2003	9:58	78.9	53.20	-	6.50	-	-	336	410	1,030	< 1	35,900	3,710	278	-	12.9	< 0.05	6.6	378	33	37	19,800	59,600	78.3	1,020	0.37	-
PNR-15	11/05/2003	14:30	81.6	53.70	-	5.92	-	-	371	453	914	< 4	31,800	3,380	267	-	10.5	< 0.05	6.7	386	39	39	18,700	51,800	37.8	1,100	0.38	-
PNR-15	03/17/2004	13:35	84	45.90	-	6.42	-	-	402	490	827	< 1	27,600	3,110	253	-	10.1	< 0.05	6.1	286	35	43	15,800	45,800	66.3	1,160	0.35	-
PNR-15	06/08/2004	12:45	56.3	37.80	-	7.01	-	-	422	515	652	< 4	24,700	2,490	209	-	9.0	< 0.05	7.0	241	30	36	13,900	37,100	60.5	1,530	0.48	-
PNR-15	09/15/2004	16:30	62.2	43.10	-	6.74	-	-	423	516	753	< 4	23,300	2,920	252	-	9.4	< 0.05	7.0	235	36	40	13,200	39,000	58.9	1,310	0.44	-
PNR-15	11/18/2004	9:05	58.9	40.40	-	6.88	-	-	384	469	668	< 4	21,300	2,660	239	-	7.7	< 0.05	6.8	253	27	30	12,000	35,200	54.7	1,310	0.49	-
PNR-15	03/02/2005	12:20	47.6	38.20	-	6.72	-	-	467	570	660	< 4	19,600	2,640	242	-	7.4	< 0.05	7.0	191	31	39	11,800	33,000	50.2	1,290	0.54	-
PNR-15	05/25/2005	10:40	44	35.30	-	6.95	-	-	453	553	498	< 4	14,700	2,040	194	-	5.9	< 0.05	7.2	175	29	38	9,080	26,100	40	1,650	0.71	-
PNR-15	08/17/2005	16:45	43.7	36.60	-	6.93	-	-	504	615	510	< 4	12,700	2,090	199	-	6.2	< 0.05	7.2	128	26	29	8,400	27,300	42.2	1,200	0.59	-
PNR-15	11/16/2005	11:35	44.2	33.40	-	7.02	-	-	494	603	555	< 4	13,800	2,270	214	-	5.5	< 0.05	7.1	177	33	39	8,830	22,800	37.7	1,420	0.60	-
PNR-15	02/08/2006	10:45	33.1	31.70	-	7.17	-	-	575	701	392	< 4	10,400	1,580	146	-	4.6	< 0.05	7.2	115	30	35	6,920	19,500	31.6	1,560	0.68	-
PNR-15	05/24/2006	11:15	19.2	30.30	-	7.25	-	-	604	737	255	< 4	7,470	1,010	91	-	3.5	< 0.05	7.9	90	29	33	5,310	14,200	24.3	1,840	0.86	-
PNR-15	08/23/2006	17:15	28.2	31.80	0.16	6.80	-	-	562	686	312	< 4	8,720	1,230	111	-	3.9	< 0.05	7.2	93	27	27	5,950	16,900	28.2	1,670	0.70	-
PNR-15	12/07/2006	16:30	22.0	28.50	-	7.08	-	-	575	701	310	< 4	8,790	1,250	115	-	4.3	< 0.05	7.3	85	26	28	5,720	17,100	28.1	1,650	0.80	-
PNR-15	03/14/2007	11:40	31.8	26.10	-	7.00	-	-	572	697	352	< 4	9,290	1,470	142	-	4.9	< 0.05	7.3	100	158	-	6,260	17,600	28.7	1,640	0.73	-
PNR-15	10/04/2007	18:00	26.10	26.10	-	7.05	-	-	578	705	328	[3] < 4	9,050	[2] 1,340	126	[3] -	4.6	< 0.05	7.2	96	[3] 28	[3] 36	[2] 6,390	[2] 16,800	28	1,810	[3] 0.6	-
PNR-15	03/27/2008	15:20	22.70	26.90	-	7.30	-	-	604	737	269	[3] < 4	7,720	[2] 1,130	113	[3] -	3.7	< 0.05	7.3	81	[3] 24	[3] 35	[2] 5,390	[2] 15,100	25	1,580	[3] 0.60	-
PNR-15	10/27/2008	12:30	20.39	24.91	0.08	7.20	-	-	628	766	217	< 4	6,110	911	90	-	3.5	< 0.05	7.5	64	21	27.5	4,510	12,900	20.7	1,910	0.70	-
PNR-15	04/16/2009	14:30	17.97	22.95	0.26	7.23	-	-	633	772	165	< 4	5,000	[2] 705	71	-	2.3	< 0.05	7.7	60	21.1	[3] 22.0	[2] 3,940	[2] 10,600	18.3	1,770	[3] 0.70	-
PNR-15	10/02/2009	11:40	16.4	23.01	0.23	7.24	-	-	620	756	137	< 4	4,450	585	59	-	2.4	< 0.01	7.5	50	20.8	24	3,370	9,810	15.9	1,400	0.70	-
PNR-15	04/15/2010	14:40	14.57	21.56	0.24	7.45	-	-	612	747	114	< 4	3,670	[2] 486	49	-	2.3	[3] < 0.01	7.5	50	20.3	[3] 23	[2] 3,150	[2] 9,100	13.7	1,600	[3] 0.80	-
PNR-15	09/22/2010	11:30	12.65	20.60	1.25	7.44	-	-	722	880	100	< 4	2,730	[2] 418	41	-	6.0	[3] < 0.01	[2] 7.7	43	21.1	[3] 24.1	[2] 2,940	[2] 8,310	12.3	1,440	[3] 0.90	-
PNR-15	05/06/2011	10:20	11.48	19.29	0.28	7.43	-	-	645	787	99	< 4	2,720	409	39	-	1.6	< 0.01	7.7	38	25.6	40	2,610	7,920	11.3	1,940	0.70	-
PNR-15	Damaged - well abandoned Sept 2011																											
PNR-16	08/10/2001	15:15	4.3	10.10	-	7.80	-	-	508	620	359	< 1	33	2,300	340	-	0.3	20.2	7.4	19	22.1	-	282	4,260	4.24	2,480	-	-
PNR-16	08/16/2001	18:35	4.6	11.10	-	7.80	-	-	485	592	396	< 1	33	2,460	357	-	0.1	19	7.2	20	22.6	-	299	4,260	4.14	2,380	-	-
PNR-16	11/06/2001	16:05	1.9	11.10	-	6.90	-	-	526	642	458	< 1	26	2,570	347	-	2.0	8.6	7.1	21	-	158	337	4,650	4.62	2,780	-	-
PNR-16	02/21/2002	10:20	4.6	9.10	-	7.04	-	-	635	774	469	< 4	28	2,850	408	-	1.4	13.3	7.1	26	39	-	427	4,960	5.08	3,180	-	-
PNR-16	05/21/2002	15:50	4.9	11.60	-	7.50	-	-	488	595	390	< 4	16	2,650	407	-	0.2	16.5	7.3	20	39.9	-	289	5,090	5	3,460	0.45	-
PNR-16	08/20/2002	11:40	4.2	11.20	-	6.80	-	-	494	603	399	< 4	26	2,860	452	-	< 0.1	17.7	7.3	14	24.2	42.1	371	5,060	5.03	3,270	0.46	-
PNR-16	11/05/2002	14:04	4.9	10.40	-	7.10	-	-	498	608	422	< 4	24	2,810	428	-	< 0.1	18.2	7.2	21	22	30	286	5,110	5.16	3,210	0.47	-
PNR-16	03/04/2003	13:00	4.5	8.10	-	7.30	-	-	474	578	426	< 4	22	2,770	460	-	0.5	18.4	7.1	20	23.8	103	361	5,050	4.93	3,190	0.40	-
PNR-16	05/27/2003	18:30	4.78	11.00	-	7.01	-	-	518	632	416	< 1	28	2,760	419	-	< 0.1	18.7	7.1	19	24	26	285	4,990	5.36	3,090	0.52	-
PNR-16	08/13/2003	9:10	3.7	10.50	-	7.55	-	-	499	609	405	< 1	17	2,730	417	-	0.2	18.2	7.1	20	23.7	36.8	302	5,060	4.7	3,120	0.44	-
PNR-16	11/04/2003	12:30	5.4	8.20	-	7.53	-	-	494	603	384	< 4	17	2,790	446	-	0.5	17.8	7.3	23	25.4	33.2	312	5,030	4.5	3,260	0.44	-
PNR-16	03/17/2004	16:09	6.6	14.00	-	8.65	-	-	509	622	454	< 1	19	3,010	457	-	0.4	16.3	7.0	22	26.7	35.1	320	5,110	4.94	3,250	0.47	-
PNR-16	06/08/2004	12:30	4.23	9.60	-	7.24	-	-	514	627	397	< 4	9	2,740	425	-	< 0.1	19.3	7.1	20	23.9	33	301	4,940	4.89	3,070	0.58	-
PNR-16	09/14/2004	12:40	4.67	13.80	-	7.35	-	-	513	626	436	< 4	22	2,960	454	-	< 0.1	18.8	7.3	22	26.6	41.1	294	[2] 4,920	4.93	2,990	[3] 0.53	-
PNR-16	11/16/2004	12:30	5.4	13.30	-	7.26	-	-	486	593	422	< 4	24	2,750	412	-	0.2	19	7.3	21	24.3	245	282	4,840	4.92	2,930	0.55	-
PNR-16	03/01/2005	14:30	4.5	9.50	-	6.97	-	-	515	628	440	< 4	21	2,980	458	-	< 0.1	18.2	7.1	22	27.3	34.5	339	4,960	4.92	2,890	0.53	-
PNR-16	05/24/2005	13:58	4.9	11.40	-	6.99	-	-	425	519	423	< 4	19	2,750	411	-	1.0	17.1	7.0	24	25.9	53.5	342	5,000	4.94	2,950	0.52	-
PNR-16	08/17/2005	9:30	4.75	10.60	-	7.04	-	-	506	617	427	< 4	18	2,920	450	-	< 0.1	22.1	7.4	22	25	37.4	291	4,960	4.95	2,940	0.34	-
PNR-16	11/15/2005	15:15	5	8.40	-	7.05	-	-	460	562	466	< 4	20	3,140	480	-	0.1	20.4	7.2	19	25.9	88.9	341	4,960	5	3,120	0.46	-
PNR-16	02/07/2006	16:47	4.6	4.90	-	7.16	-	-	490	597	456	< 4	20	2,950	440	-	0.3	19.7	7.0	21	25.5	61.4	341	5,000	5.1	3,020	0.43	-
PNR-16	05/24/2006	12:25	3.9	10.40	-	7.00	-	-	486	592	432	< 4	23	3,080	486	-	0.2	25.7	7.9	22	27.7	43.8	349	4,780	5.13	3,200	0.51	-
PNR-16	08/22/2006	13:20	5.32	11.20	4.14	6.97	-	-	462	564	437	< 4	19	2,970	456	-	< 0.1	18.3	6.9	22	26	45.3	348	4,860	5.2	2,950	0.46	-
PNR-16	12/06/2006	13:00	4.88	5.42	-	7.28	-	-	466	569	450	< 4	20	2,990	454	-	< 0.1	20.9	7.4	22	27	29.4	324	4,970	5.3	3,000	0.50	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-16	03/13/2007	12:45	4.994	8.76	4.62	6.52	-	-	460	561	463	< 4	20	3,060	463	-	< 0.1	21	7.2	21	40	-	330	5,050	5.25	3,120	0.46	-
PNR-16	10/03/2007	10:55	6.21	13.20	-	7.03	-	-	445	543	453	[3] < 4	18	2,950	443	-	0.8	15.1	7.2	24	36.7	[3] 42.4	[3] 403	[3] 5,030	5.55	3,150	0.4	-
PNR-16	03/26/2008	14:30	5.182	10.30	0.50	6.90	-	-	473	577	444	[3] < 4	32	2,910	436	-	0.6	19.3	7.1	20	25.5	[3] 92.4	[3] 341	[3] 5,110	5.23	3,160	0.50	-
PNR-16	10/23/2008	11:00	4.890	8.88	2.87	7.28	-	-	468	571	451	< 4	19	3,000	454	-	< 0.1	17.2	7.1	20	26.4	35.8	380	4,960	5.21	3,140	0.50	-
PNR-16	04/17/2009	13:40	4.838	10.11	3.71	6.93	-	-	464	566	404	< 4	22	2,770	429	-	< 0.1	21.90	7.2	20	26.8	32.0	[3] 288	4,320	4.9	2,920	[3] 0.50	-
PNR-16	10/03/2009	8:30	4.632	8.73	-	6.93	-	-	467	569	373	< 4	16	2,570	397	-	< 0.05	22.8	7.2	18	27.5	29	295	3,430	4.41	2,360	0.50	-
PNR-16	04/14/2010	15:15	4.339	7.00	1.35	7.00	-	-	462	564	430	< 4	17	[3] 2,790	417	-	< 0.05	21.8	[3] 7.1	22	26.4	30	[3] 358	[3] 4,960	4.96	3,070	[3] 0.40	-
PNR-16	09/18/2010	13:00	4.777	9.81	1.40	6.88	-	-	444	541	398	< 4	18	[3] 2,540	375	-	0.2	22.1	[3] 7.3	20	26.2	58.2	276	4,350	4.57	2,510	[3] 0.50	-
PNR-16	05/04/2011	10:30	4.327	8.22	6.74	7.17	-	-	487	595	396	< 4	19	2,620	395	-	< 0.05	23.3	7.2	20	26.9	45.1	288	4,550	4.47	2,960	0.50	-
PNR-16	09/21/2011	9:07	5.164	10.12	5.12	6.55	3,354	-	-	-	-	-	17	-	-	-	-	-	-	-	-	-	-	4,690	-	-	-	-
PNR-16	10/12/2012	9:00	4.960	7.98	1.57	6.75	3,120	134.8	-	-	-	-	19	[3] -	-	-	-	-	-	-	-	-	-	4,550	-	-	-	-
PNR-16	[15] 05/08/2013	9:50	4.930	10.24	5.59	[13] 6.79	3,200	-22.7	-	-	-	-	16	[3] -	-	-	-	-	-	-	-	-	-	4,250	-	-	-	-
PNR-16 Dup	[15] 05/08/2013	9:50	-	-	-	-	-	-	-	-	-	-	16	[3] -	-	-	-	-	-	-	-	-	-	4,190	-	-	-	-
PNR-17	08/22/2001	12:35	98.7	75.00	-	-	-	-	220	269	1,440	< 1	42,500	5,450	449	-	21.8	< 0.05	7.4	372	55.2	-	22,900	68,800	65.4	1,520	-	-
PNR-17	08/22/2001	13:30	97.4	76.00	-	-	-	-	219	267	1,420	< 1	44,200	5,490	468	-	22.3	< 0.05	7.3	367	55	-	22,900	68,700	66.4	1,440	-	-
PNR-17	11/08/2001	11:30	-	88.90	-	-	-	-	178	217	2,380	< 1	40,300	10,300	1,070	-	31.5	0.1	7.1	289	-	153	20,800	61,800	47.8	1,490	-	-
PNR-17	02/21/2002	17:00	94.6	83.10	-	6.26	-	-	237	289	1,850	< 4	41,500	7,120	608	-	29.9	< 0.05	6.8	291	111	-	21,200	65,900	59.1	1,120	-	-
PNR-17	05/23/2002	10:50	106.8	82.20	-	6.62	-	-	262	319	1,360	< 4	42,300	4,990	386	-	22.9	< 0.05	6.8	289	76	-	21,000	62,800	67.0	1,480	0.43	-
PNR-17	08/21/2002	15:15	103.7	71.50	-	6.50	-	-	358	437	1,220	< 4	41,000	4,420	334	-	19.3	< 0.05	6.8	316	40	104	15,400	70,000	53.1	1,400	0.44	-
PNR-17	11/06/2002	15:40	114.8	68.70	-	6.59	-	-	291	355	1,360	< 4	36,300	4,870	358	-	19.1	< 0.05	6.8	405	34	88	23,500	67,100	58.3	1,630	0.38	-
PNR-17	03/05/2003	13:30	113.5	71.30	-	7.08	-	-	301	367	1,190	< 4	40,600	4,220	303	-	16.8	< 0.05	6.8	342	36	70	24,000	65,400	46.2	1,580	0.40	-
PNR-17	05/28/2003	10:00	96	68.60	-	6.50	-	-	327	400	1,100	< 1	38,300	3,920	288	-	15.7	< 0.05	6.7	383	33	58	22,000	66,400	91.6	1,320	0.40	-
PNR-17	08/14/2003	11:05	106.5	60.00	-	6.41	-	-	331	404	942	< 1	39,700	9,060	248	-	16.5	< 0.05	6.7	288	29	47	17,600	65,900	85.9	1,020	0.36	-
PNR-17	11/06/2003	11:30	104.9	53.50	-	6.54	-	-	389	474	914	< 4	38,600	3,360	262	-	15.2	< 0.05	6.8	378	30	31	20,500	62,000	41.8	783	0.33	-
PNR-17	03/17/2004	15:10	70	58.80	-	6.00	-	-	453	553	900	< 1	36,900	3,490	302	-	12.9	< 0.05	6.7	326	32	35	20,200	58,100	83.2	536	0.31	-
PNR-17	06/09/2004	15:45	81.7	48.60	-	6.85	-	-	488	595	770	< 4	35,600	3,070	277	-	12.4	< 0.05	6.7	274	30	54	18,700	54,700	81.4	692	0.40	-
PNR-17	09/16/2004	9:35	76.8	52.90	-	6.65	-	-	556	678	689	[3] < 4	31,300	[3] 2,820	268	[3] -	12.0	< 0.05	6.9	271	[3] 32	[3] 48	[3] 17,500	[3] 50,000	74.5	579	[3] 0.36	-
PNR-17	11/18/2004	12:20	70.8	48.00	-	6.92	-	-	652	796	498	< 4	22,200	2,160	224	-	9.2	0.19	7.1	269	29	41	15,000	43,200	66.6	311	0.46	-
PNR-17	03/02/2005	15:30	49.2	51.20	-	6.72	-	-	833	1,020	366	< 4	20,500	1,650	179	-	7.2	< 0.05	7.2	209	33	41	13,400	35,400	54.9	506	0.86	-
PNR-17	05/25/2005	14:25	46	44.90	-	6.49	-	-	778	949	252	< 4	17,300	1,250	151	-	6.6	< 0.05	7.2	176	30	35	11,200	30,500	47.2	757	0.88	-
PNR-17	08/17/2005	17:25	36.6	41.80	-	6.79	-	-	1010	1,230	166	< 4	12,000	877	112	-	5.3	< 0.05	7.4	100	27	30	8,330	25,700	41.3	583	0.65	-
PNR-17	11/16/2005	14:01	37.3	44.10	-	7.43	-	-	1040	1,260	113	< 4	11,400	644	88	-	3.6	< 0.05	7.6	74	27	31	7,670	18,600	31.5	755	0.97	-
PNR-17	02/08/2006	14:05	26.2	41.00	-	7.61	-	-	1160	1,420	80	< 4	8,080	397	48	-	3.6	< 0.05	7.9	93	26	24	5,970	15,700	25.9	814	1.07	-
PNR-17	05/24/2006	13:50	22	37.20	-	7.36	-	-	1050	1,280	60	< 4	7,200	311	39	-	3.4	< 0.05	8.0	69	24	34	5,240	12,800	22.6	1,070	0.78	-
PNR-17	08/24/2006	12:45	18.7	39.60	-	8.56	-	-	994	1,210	48	< 4	5,500	254	32	-	2.4	< 0.05	7.9	59	22.7	25.7	4,710	11,300	19.6	1,180	1.10	-
PNR-17	12/08/2006	12:30	13.5	37.90	-	7.56	-	-	947	1,160	43	< 4	4,620	221	28	-	10.4	< 0.05	8.1	51	21.2	21	3,990	10,500	17.4	1,290	1.10	-
PNR-17	03/15/2007	11:49	14.7	38.10	-	7.86	-	-	936	1,140	42	< 4	4,250	225	29	-	2.2	< 0.05	8.1	50	72.6	-	3,660	9,400	15.5	1,430	1.18	-
PNR-18	08/08/2001	16:00	3.0	11.40	-	7.40	-	-	616	751	276	< 1	57	1,580	215	-	2.4	< 0.05	7.3	12	19.9	-	193	2,740	2.94	1,470	-	-
PNR-18	08/16/2001	11:00	-	[11] 12.20	-	7.50	-	-	558	681	264	< 1	56	1,630	235	-	2.3	< 0.05	7.3	11	23.6	-	203	2,900	3.04	1,520	-	-
PNR-18	11/07/2001	10:20	-	12.20	-	-	-	-	696	849	256	< 1	84	1,470	200	-	1.4	0.13	7.5	10	-	30.8	184	2,650	2.91	1,220	-	-
PNR-18	02/20/2002	11:24	-	10.50	-	7.30	-	-	671	819	310	< 4	70	1,750	238	-	2.2	< 0.05	7.3	10	26	-	241	2,950	3.45	1,600	-	-
PNR-18	05/21/2002	10:30	3.52	13.10	-	7.22	-	-	624	761	283	< 4	42	1,600	217	-	2.8	< 0.05	7.4	7	27.9	-	172	2,960	3.41	1,900	0.26	-
PNR-18	08/19/2002	16:50	3.2	12.30	-	7.00	-	-	576	703	299	< 4	57	1,800	256	-	2.5	0.05	7.1	7	23.5	31.7	152	3,130	3.48	1,690	0.26	-
PNR-18	11/05/2002	11:55	3.47	12.00	-	7.41	-	-	613	748	328	< 4	60	1,800	240	-	2.4	< 0.05	7.2	8	22.8	29.6	184	3,210	3.63	1,790	0.27	-
PNR-18	03/04/2003	14:35	3.23	10.80	-	7.23	-	-	583	712	332	< 4	67	1,820	241	-	2.4	< 0.05	7.0	8	24.1	36.5	180	3,140	3.61	1,760	0.30	-
PNR-18	05/13/2003	11:45	3.2	12.30	-	7.97	-	-	623	760	325	< 4	60	1,860	254	-	2.6	< 0.05	7.0	8	22.9	32.7	200	3,150	3.36	1,690	0.30	-
PNR-18	08/14/2003	8:40	2.9	14.20	-	7.97	-	-	616	752	312	< 1	45	1,750	235	-	2.2	< 0.05	6.9	7	24.1	143	196	3,200	3.5	1,710	0.25	-
PNR-18	11/04/2003	16:00	3.1	10.30	-	7.60	-	-	650	793	284	< 4	52	1,790	264	-	2.3	< 0.05	7.2	8	25.9	32.4	234	3,250	3.22	1,820	0.27	-
PNR-18	06/08/2004	9:55	-	[11] 12.40	-	7.41	-	-	677	826	353	< 4	60	2,040	280	-	2.8	< 0.05	7.2	8	27	114	261	3,210	3.39	1,640	0.29	-
PNR-18	09/14/2004	8:55	3.3	10.60	-	7.45	-	-	737	899	327	< 4	52	[3] 1,860	254	-	2.8	0.05	7.2	8	25.3	27.7	263	[3] 3,280	3.72	1,740	[3] 0.25	-
PNR-18	11/18/2004	14:25	3.8	10.90	-	7.07	-	-	715	872	332	< 4	57	1,870	254	-	2.5	< 0.05	7.1	8	26.4	28.2	272	3,350	3.77	1,710	0.27	-
PNR-18	02/28/2005	17:50	3.5	10.90	-	6.75	-	-	712	869	318	< 4	53	1,870	262	-	3.2	< 0.05	7.0	8	27.5	34.3	247	3,240	3.58	1,660	0.23	-
PNR-18	05/25/2005	17:30	2.8	12.20	-	7.11	-	-	594	724	314	< 4	57	1,840	256	-	3.9	< 0.05	7.0	8	26.3	32.3	236	3,150	3.5	1,620	0.25	-
PNR-18	08/15/2005	18:00	3.4	21.90	-	7.05	-	-	752	918	332	< 4	55	1,940	270	-	2.9	< 0.05	7.2	7	24.7	24.6	274	3,330	3.59	1,600	0.23	-
PNR-18	11/15/2005	10:30	3.52	8.80	-	7.07	-	-	675	824	330	< 4	60	1,970	278	-	2.6	< 0.05	7.2	6	25.4	27.1	298	3,300	3.8	1,700	0.25	-
PNR-18	02/07/2006	11:30	3.5	7.90	-	7.08	-	-	743	906	307	< 4	61	1,850	262	-	2.9	< 0.05	7.0	8	27.1	30.2	300	3,270	3.8	1,660	0.21	-
PNR-18	05/23/2006	11:15	3.487	12.55	-	7.02	-	-	716	874	310	< 4	69	1,840	259	-	2.6	< 0.05	7.8	9	27.6	29.8	326	3,030	3.8	1,770	0.24	-
PNR-18	08/22/2006	17:17	3.29	10.40	0.2	7.11	-	-	708	863	317	< 4	73	1,870	261	-	2.3	< 0.05	7.0	9	27.2	28.2	346	3,360	4	1,670	0.22	-
PNR-18	12/05/2006	14:45	3.855	9.58	-	6.97	-	-	688	840	312	< 4	74	1,830	256	-	2.7	< 0.05	7.0	8	27	28.6	310	3,420	4	1,670	0.20	-
PNR-18	03/14/2007	11:10	3.628	9.72	0.12	6.83	-	-	719	877	316	< 4	86	1,850	256	-	3.2	< 0.05	7.2	7	41.9	-	360	3,480	4.08	1,720	0.22	-
PNR-18	10/02/2007	17:20	4.714	9.87	0.01	7.31	-	-	740	903	308	< 4	86	1,810	252	-	3.0	< 0.05	7.2	8	41.9	[3] 28.9	[3] 360	3,490	4.37	1,730	0.20	-
PNR-18	03/26/2008	13:30	4.099	9.94	0.15	6.94	-	-	746	910	298	< 4	93	1,760	247	-	2.3	< 0.05	7.2	7	26.4	[3] 28.2	375	3,570	4.07	1,670	0.20	-
PNR-18	10/22/2008	16:00	4.076	9.86	0.80	7.08	-	-	742	905	301	< 4	119	1,780	250	-	3.0	< 0.05	7.4	7	26	30.3	405	3,570	4.14	1,710	0.20	-
PNR-18	04/17/2009	15:50	4.218	9.75	0.52	6.85	-	-	722	881	295	< 4	127	1,730	241	-	2.9	< 0.05	7.1	8	26.5	30.0	[3] 386	3,160	4.1	1,630	0.30	-
PNR-18	10/04/2009	11:30	4.163	9.86	0.56	6.88	-	-	721	880	310	< 4	112	1,820	253	-	3.0	< 0.01	7.1	8	27.3	31	396	3,080	3.99	1,590	0.20	-
PNR-18	04/13/2010	13:20	3.924	9.62	0.66	6.92	-	-	670	817	306	< 4	117	[3] 1,770	245	-	3.6	[3] < 0.01	7.1	9	28.1	31	[3] 397	[3] 3,570	4.06	1,680	[3] 0.20	-
PNR-18	09/16/2010	17:00	4.161	9.82	0.57	6.90	-	-	723	882	323	< 4	124	[3] 1,830	248	-	3.2	[3] < 0.01	7.1	8	27.9	27.9	413	3,500	4	1,580	[3] 0.20	-
PNR-18	05/03/2011	16:45	4.005	9.82	0.69	6.87	-	-	742	905	301	< 4	149	1,720	236	-	20.4	0.03	7.1	8	26.6	81.5	388	3,480	3.99	1,780	0.20	-
PNR-18	09/21/2011	15:01	4.548	9.19	0.29	6.59	2,962	-	-	-	-	-	124	[3] -	-	-	-	-	-	-	-	-	-	3,530	-	-	-	-
PNR-18	10/12/2012	16:28	4.258	8.60	0.58	6.53	2,760	124.2	-	-	-	-	114	[3] -	-	-	-	-	-	-	-	-	-	3,750	-	-	-	-
PNR-18	[15] 05/08/2013	13:52	4.299	10.10	0.21	7.08	2,794	-122.9	-	-	-	-	127	[3] -	-	-	-	-	-	-	-	-	-	3,710	-	-	-	-
PNR-19	08/07/2001	14:50	11.25	9.90	-	7.30	-	-	354	432	724	< 1	3,820	4,410	631	-	< 0.1	18	7.0	19	21.4	-	819	8,810	10.6	1,160	-	-
PNR-19	08/15/2001	16:40	-	[11] 13.50	-	7.40	-	-	344	420	702	< 1	3,180	4,260	610	-	< 0.1	13.8	7.2	20	22.5	-	745	8,260	9.47	1,120	-	-
PNR-19	11/06/2001	15:20	-	[12] 8.30	-	6.80	-	-	343	418	792	< 1	3,770	4,760	675	-	< 0.1	20.2	7.1	20	-	25.4	861	8,650	11.4	1,270	-	-
PNR-19	02/19/2002	15:05	12.3	10.50	-	6.96	-	-	326	398	971	< 4	4,410	5,710	799	-	< 0.1	23	7.0	26	26	-	1,130	9,380	14.1	1,400	-	-
PNR-19	05/22/2002	14:55	16.2	10.00	-	7.01	-	-	352	430	927	< 4	6,080	5,570	791	-	< 0.1	23.8	7.1	25	26	-	1,300	11,300	15.6	1,160	0.24	-
PNR-19	08/20/2002	12:30	11.5	12.90	-	6.90	-	-	360	439	908	< 4	5,070	5,510	787	-	< 0.1	22.1	7.0	20	21	27	1,210	11,300	15.1	1,470	0.28	-
PNR-19	11/05/2002	13:17	15.9	10.00	-	7.02	-	-	359	438	943	< 4	4,960	5,460	755	-	< 0.1	23.3	7.1	22	19	25	1,220	11,400	16.2	1,380	0.28	-
PNR-19	03/04/2003	12:20	16	8.80	-	6.88	-	-	345	420	1,020	< 4	5,520	5,910	818	-	< 0.1	25.7	7.0	25	21	24	1,450	11,500	16.6	1,560	0.30	-
PNR-19	05/27/2003	17:20	17.12	12.20	-	6.94	-	-	360	440	1,020	< 1	5,880	5,890	813	-	< 0.1	24.4	6.9	26	21	23	1,470	12,900	18.9	1,420	0.30	-
PNR-19	08/13/2003	8:55	13.8	10.10	-	7.36	-	-	350	427	1,020	< 1	6,210	5,880	810	-	< 0.1	24.6	7.0	24	20	31	1,570	13,000	12.4	1,130	0.29	-
PNR-19	11/04/2003	10:50	13.1	9.10	-	6.91	-	-	354	431	946	< 4	6,820	5,800	834	-	< 0.1	28.7	7.0	30	22	25	1,680	12,200	15.8	1,390	0.28	-
PNR-19	03/17/2004	16:40	10.8	13.00	-	8.75	-	-	364	444	1,280	< 1	7,970	7,210	976	-	< 0.1	24.8	7.0	33	24	28	2,140	14,700	20	1,390	0.25	-
PNR-19	06/08/2004	13:55	16.9	10.40	-	7.13	-	-	358	437	1,070	< 4	6,860	6,060	825	-	< 0.1	25	7.0	30	20.8	25.3	2,110	15,200	19.3	1,560	0.31	-
PNR-19	09/14/2004	14:15	15.6	11.30	-	7.48	-	-	345	421	912	< 4	5,580	[3] 5,120	691	-	< 0.1	24.6	7.1	34	23.7	[3] 24.5	[3] 1,870	12,600	17.1	1,110	[3] 0.33	-
PNR-19	11/16/2004	13:45	21	10.60	-	7.23	-	-	335	409	1,010	< 4	6,270	5,600	745	-	< 0.1	27.2	7.0	30	22.4	22.5	1,990	13,000	18.6	1,250	0.32	-
PNR-19	03/01/2005	15:35	18.6	10.10	-	6.89	-	-	368	449	1,140	< 4	7,590	6,460	877	-	< 0.1	26.3	7.0	34	24	23	2,680	15,700	21.8	1,380	0.32	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Flouride mg/L	Iron mg/L
PNR-19	05/25/2005	12:36	22.2	10.00	-	6.80	-	-	318	388	1,100	< 4	7,370	6,130	824	-	< 0.1	28.3	7.0	35	21.6	20.3	2,570	16,700	22.1	1,540	0.31	-
PNR-19	08/17/2005	12:23	20.3	10.70	-	6.93	-	-	353	431	1,040	< 4	6,970	5,830	782	-	< 0.1	18.1	7.1	28	21	19.8	2,380	15,600	20.8	1,410	0.29	-
PNR-19	11/16/2005	12:00	22.2	8.60	-	6.69	-	-	325	397	1,200	< 4	8,620	6,650	888	-	< 0.1	27.4	7.1	42	22.1	22	3,050	16,600	24.1	1,350	0.25	-
PNR-19	02/08/2006	12:55	24.4	8.80	-	7.37	-	-	358	437	1,320	< 4	8,450	7,290	968	-	< 0.1	28.2	7.1	40	23	23	3,340	16,100	24.9	1,530	0.25	-
PNR-19	05/24/2006	15:20	20.6	11.10	-	6.85	-	-	347	423	1,230	< 4	9,690	6,850	921	-	< 0.1	25.4	7.6	45	22	24	3,660	16,500	26.4	1,430	0.27	-
PNR-19	08/23/2006	14:05	22.9	10.50	0.39	6.86	-	-	330	403	1,300	< 4	9,690	6,990	905	-	< 0.1	21.3	6.8	40	27	27	3,830	19,300	28.6	1,350	0.30	-
PNR-19	12/07/2006	15:30	29.30	8.94	-	6.76	-	-	349	425	1,560	< 4	13,300	8,350	1,080	-	< 0.1	21.4	7.0	40	22	31	5,220	24,700	37.9	1,510	0.20	-
PNR-19	03/14/2007	17:20	25.5	9.30	-	6.98	-	-	331	404	1,270	< 4	10,400	6,830	891	-	< 0.1	20.7	7.0	53	224	-	4,260	20,000	30	1,040	0.25	-
PNR-19	10/03/2007	14:50	28.16	9.90	2.32	6.32	-	-	333	407	1,150	[3] < 4	11,200	[3] 6,010	762	[3] -	< 0.1	26.2	6.9	38	[3] 23	[3] 25	[3] 4,370	[3] 20,000	31.4	1,350	[3] 0.3	-
PNR-19	03/27/2008	16:30	32.01	9.38	0.61	6.72	-	-	347	423	1,460	[3] < 4	13,100	[3] 7,560	947	[3] -	< 0.1	18.7	6.6	42	[3] 26	[3] 24	[3] 5,940	[3] 24,000	36.3	1,290	[3] 0.20	-
PNR-19	10/25/2008	15:15	31.31	8.98	0.41	6.90	-	-	346	422	1,410	< 4	13,300	7,320	920	-	< 0.1	16.3	7.0	43	20	27	5,890	23,200	35.1	1,560	0.20	-
PNR-19	04/19/2009	13:55	34.82	10.00	0.92	6.59	-	-	348	424	1,180	< 4	11,700	[3] 6,020	747	-	< 0.1	20.00	6.9	63	16.0	[3] 19.0	[3] 5,540	[3] 20,200	34.2	1,370	[3] 0.20	-
PNR-19	10/06/2009	13:45	28.21	8.83	1.39	6.71	-	-	333	407	890	< 4	9,730	4,590	574	-	< 0.05	24.6	7.1	34	24	24	4,500	16,300	26.5	933	0.30	-
PNR-19	[14] 04/19/2010	10:45	31.04	10.25	1.30	6.81	-	-	352	430	1,040	[3] < 4	13,900	[3] 5,410	683	[3] -	0.1	24.5	[3] 6.9	39	[3] 22	[3] 13	[3] 5,230	[3] 20,400	31	[6] 1,330	[3] 0.30	-
PNR-19	[14] 09/22/2010	12:30	24.85	8.89	3.28	6.73	-	-	342	417	809	< 4	8,470	[3] 4,130	512	-	0.1	27.8	[3] 7.3	33	22	[3] 22.3	[3] 4,310	[3] 16,200	23.1	[6] 1,370	[3] 0.30	-
PNR-19	[14] 05/04/2011	17:10	15.98	9.21	6.19	7.10	-	-	312	380	479	< 4	5,130	2,600	340	-	0.2	23.9	7.3	21	23.3	25.2	2,690	10,500	14.6	1,080	0.40	-
PNR-19	[14] 09/22/2011	10:26	5.046	8.67	-	7.11	3,289	-	-	-	-	-	1,120	[3] -	-	-	-	-	-	-	-	-	-	3,390	-	-	-	-
PNR-19	[14] 05/17/2012	11:30	9.821	7.99	3.06	mnw	-	-	-	-	-	-	2,230	-	-	-	-	-	-	-	-	-	-	5,260	-	-	-	-
PNR-19	[14] 10/24/2012	17:23	8.715	8.90	2.83	6.58	5,658	-55.7	-	-	-	-	2,160	[3] -	-	-	-	-	-	-	-	-	-	5,470	-	-	-	-
PNR-19	05/08/2013	18:29	12.13	9.25	1.47	6.71	7,880	207.1	-	-	-	-	3,140	[3] -	-	-	-	-	-	-	-	-	-	7,610	-	-	-	-
PNR-19	09/28/2013	12:46	6.697	9.88	5.52	7.13	4,354	90.7	-	-	-	-	1,270	[3] -	-	-	-	-	-	-	-	-	-	4,760	-	-	-	-
PNR-20	08/08/2001	9:50	38.95	11.20	-	7.20	-	-	413	504	1,750	< 1	16,100	9,420	1,230	-	< 0.1	11.2	7.2	42	18.5	-	5,180	29,000	38.1	1,190	-	-
PNR-20	08/15/2001	17:15	-	[11] 10.40	-	7.30	-	-	412	502	1,800	< 1	12,900	9,710	1,270	-	< 0.1	10.4	7.1	46	24.2	-	4,800	25,400	29.6	1,420	-	-
PNR-20	11/08/2001	10:00	-	11.10	-	-	-	-	508	620	1,610	< 1	10,600	8,940	1,200	-	0.2	4.26	6.9	37	-	68.4	3,480	19,900	26.8	1,460	-	-
PNR-20	02/19/2002	15:40	34.8	10.00	-	6.70	-	-	391	477	1,830	< 4	15,400	9,840	1,280	-	< 0.1	10.8	6.8	43	26	-	5,460	25,200	32.7	1,180	-	-
PNR-20	05/22/2002	11:00	40.2	11.20	-	6.78	-	-	398	486	1,580	< 4	17,400	8,540	1,110	-	< 0.1	11.4	7.0	40	38	-	5,050	29,600	36.4	1,030	0.16	-
PNR-20	08/20/2002	13:25	37.4	12.30	-	6.60	-	-	425	519	1,800	< 4	17,100	10,000	1,350	-	< 0.1	9.51	6.8	35	21	45	6,840	31,400	36.8	1,390	0.17	-
PNR-20	11/05/2002	16:05	43.9	10.30	-	6.92	-	-	427	521	1,930	< 4	18,400	10,000	1,260	-	< 0.1	11	6.9	44	16	27	6,790	33,600	33.3	1,500	0.16	-
PNR-20	03/04/2003	14:15	37.4	9.20	-	6.70	-	-	417	509	1,790	< 4	17,400	9,330	1,180	-	< 0.1	10.6	6.8	47	19	34	6,840	30,200	25.6	1,650	0.20	-
PNR-20	05/28/2003	11:00	42.5	11.80	-	6.72	-	-	438	534	1,950	< 1	17,300	10,100	1,270	-	< 0.1	11.6	6.8	50	21	21	7,300	32,800	43.8	1,270	0.26	-
PNR-20	08/13/2003	11:35	34.3	10.60	-	6.98	-	-	431	526	1,740	< 1	18,100	9,060	1,150	-	< 0.1	11.7	6.6	42	21	40	6,260	32,000	40.4	1,130	0.17	-
PNR-20	11/05/2003	12:50	26.9	9.50	-	7.15	-	-	427	521	1,980	< 4	21,300	10,100	1,260	-	< 0.1	9.24	6.8	62	24	84	8,580	35,700	27.5	1,030	0.18	-
PNR-20	03/18/2004	12:50	16.2	9.60	-	-	-	-	434	529	1,770	< 1	16,700	9,250	1,170	-	< 0.1	12.7	6.8	46	22	50	6,240	28,600	39.8	1,110	0.15	-
PNR-20	06/08/2004	12:15	-	[11] 11.10	-	7.00	-	-	445	543	1,700	< 4	19,700	8,710	1,080	-	< 0.1	10.7	6.8	57	20	35	8,600	34,800	49.6	1,580	0.21	-
PNR-20	09/14/2004	13:42	41	11.20	-	7.75	-	-	451	550	1,630	< 4	15,700	[3] 8,330	1,030	-	< 0.1	12.8	6.9	58	23	[3] 27	[3] 6,970	[3] 31,500	43.4	1,410	[3] 0.18	-
PNR-20	11/17/2004	10:40	56.1	10.40	-	6.98	-	-	435	531	1,880	< 4	20,000	9,180	1,090	-	< 0.1	10.3	6.8	91	22	24	9,100	35,800	52.8	1,510	0.19	-
PNR-20	03/01/2005	16:25	41.7	9.90	-	6.73	-	-	472	576	1,640	< 4	18,600	8,200	998	-	< 0.1	11.5	6.8	56	26	28	8,570	32,400	48.1	1,410	0.43	-
PNR-20	05/24/2005	17:35	-	[11] 10.50	-	6.89	-	-	401	489	1,570	< 4	15,600	8,100	1,020	-	< 0.1	15	6.9	50	22	27	7,180	29,700	40.9	1,360	0.20	-
PNR-20	08/16/2005	15:45	49.7	19.60	-	6.56	-	-	482	588	1,600	< 4	15,600	8,070	988	-	< 0.1	15.9	7.1	36	19	19	8,140	34,300	47.2	1,160	0.19	-
PNR-20	11/15/2005	12:15	52.7	10.20	-	6.75	-	-	425	518	1,620	< 4	19,500	8,070	975	-	< 0.1	11.8	6.9	57	22	21	9,580	33,700	49.1	1,360	0.17	-
PNR-20	02/09/2006	10:50	39.7	10.20	-	6.97	-	-	467	570	1,580	< 4	15,300	7,950	972	-	< 0.1	15.4	6.9	82	22	21	7,580	26,700	41.2	1,420	0.16	-
PNR-20	05/23/2006	17:55	45.4	9.90	-	6.76	-	-	457	557	1,600	< 4	21,300	7,780	917	-	0.1	10.9	7.5	61	21	21	10,500	35,500	53.1	1,480	0.16	-
PNR-20	08/23/2006	15:50	42.1	10.10	0.22	6.75	-	-	438	534	1,630	< 4	20,600	7,750	891	-	0.1	11.9	6.7	53	30	26	10,100	35,600	54.4	1,500	0.20	-
PNR-20	12/07/2006	16:10	44.33	8.90	0.30	6.75	-	-	435	531	1,360	< 4	16,400	6,780	824	-	< 0.1	14.4	6.9	36	20	21	7,630	29,800	45.7	1,490	0.20	-
PNR-20	03/15/2007	10:18	52.20	9.23	0.44	6.68	-	-	439	536	1,640	< 4	20,800	7,950	934	-	0.2	11.4	6.7	101	334	-	11,100	35,800	53.8	1,390	0.17	-
PNR-20	10/04/2007	10:25	48.94	9.57	0.39	6.57	-	-	442	539	1,460	[3] < 4	20,000	[3] 7,050	823	[3] -	0.2	12.3	6.7	51	[3] 22	[3] 29	[3] 9,060	[3] 33,600	52.4	1,610	[3] 0.2	-
PNR-20	03/27/2008	17:40	51.50	10.30	-	7.13	-	-	455	555	1,600	[3] < 4	20,100	[3] 7,630	884	[3] -	0.2	13.5	6.8	49	[3] 27	[3] 24	[3] 10,900	[3] 34,500	52	1,410	[3] 0.20	-
PNR-20	10/25/2008	16:30	45.95	9.35	0.30	6.85	-	-	445	542	1,360	< 4	16,200	6,700	805	-	0.2	16.8	6.9	38	19	20	7,880	27,900	42.3	1,680	0.20	-
PNR-20	04/21/2009	15:40	54.16	9.89	0.14	6.66	-	-	437	533	1,690	< 4	23,100	[3] 8,210	970	-	0.4	9.59	6.7	59	7.0	[3] 14.0	[3] 11,700	[3] 35,200	54.2	1,180	[3] 0.10	-
PNR-20	10/06/2009	14:30	57.24	9.49	0.19	6.47	-	-	422	515	1,890	< 4	22,400	9,560	1,170	-	0.3	11.8	6.9	47	25	23	9,670	39,400	53.8	1,010	< 0.1	-
PNR-20	04/19/2010	12:40	54.72	9.98	0.25	6.66	-	-	423	516	1,980	[3] < 4	26,100	[3] 10,400	1,320	[3] -	0.2	10.6	[3] 6.8	69	[3] 19	[3] 22	[3] 9,830	[3] 38,900	53.2	[6] 1,250	[3] 0.10	-
PNR-20	09/22/2010	13:15	54.90	9.51	0.75	6.51	-	-	426	520	2,250	[3] < 4	22,000	[3] 11,100	1,330	-	0.1	12.2	[3] 7.1	64	19	[3] 27	[3] 11,600	[3] 37,900	51.3	[6] 1,200	[3] 0.20	-
PNR-20	05/04/2011	17:50	48.70	9.05	1.34	6.65	-	-	451	550	1,540	< 4	19,100	7,770	954	-	0.1	9.16	7.0	43	22	57	8,120	35,000	43.5	1,680	0.20	-
PNR-20	09/22/2011	11:17	40.63	9.18	1.66	6.63	26,410	-	-	-	-	-	16,000	[3] -	-	-	-	-	-	-	-	-	-	28,800	-	-	-	-
PNR-20	05/17/2012	14:50	56.13	8.24	0.28	6.30	-	-	-	-	-	-	21,900	[3] -	-	-	-	-	-	-	-	-	-	29,800	-	-	-	-
PNR-20	10/25/2012	11:32	50.125	9.04	1.32	6.54	32,715	-41.3	-	-	-	-	20,800	[3] -	-	-	-	-	-	-	-	-	-	36,800	-	-	-	-
PNR-20 Dup	10/25/2012	11:32	-	-	-	-	-	-	-	-	-	-	20,600	[3] -	-	-	-	-	-	-	-	-	-	36,400	-	-	-	-
PNR-20	05/08/2013	11:46	44.60	9.25	0.34	6.50	28,990	199.7	-	-	-	-	16,700	[3] -	-	-	-	-	-	-	-	-	-	31,600	-	-	-	-
PNR-20	Well plugged and abandoned May 2013, replaced with PNR-20-13																											
PNR-20-13	05/12/2013	11:29	56.11	9.56	2.70	6.53	36,280	134.9	-	-	-	-	21,200	[3] -	-	-	-	-	-	-	-	-	-	52,200	[6] -	-	-	-
PNR-20-13 Dup	05/12/2013	11:29	-	-	-	-	-	-	-	-	-	-	21,100	[3] -	-	-	-	-	-	-	-	-	-	56,100	[6] -	-	-	-
PNR-20-13	07/03/2013	20:47	55.03	9.59	0.61	6.34	35,770	-159.2	455	556	1,590	[3] < 4	21,500	[3] 7,790	931	0.12	[3] 0.31	16.4	[3] 7.1	[8] 45	[3] 18	[3] 16	[3] 10,000	[3] 40,000	[3] 53.2	[6] 1,610	[3] 0.1	< 0.2 [3]
PNR-20-13	09/24/2013	17:15	54.68	9.43	0.11	6.42	35,540	-147.9	-	-	-	-	21,500	[3] -	-	-	-	-	-	-	-	-	-	57,000	-	-	-	-
PNR-21	08/09/2001	10:15	65.5	11.00	-	6.80	-	-	501	611	2,060	< 1	26,500	9,670	1,100	-	2.0	8.16	6.8	63	16	-	12,500	47,000	58.5	1,450	-	-
PNR-21	08/16/2001	16:40	62	11.40	-	7.00	-	-	548	669	2,140	< 1	26,900	10,200	1,170	-	4.2	< 0.05	6.9	61	17	-	13,200	47,000	53.4	1,510	-	-
PNR-21	11/08/2001	11:00	60.3	14.40	-	7.10	-	-	538	656	2,090	< 1	27,900	9,930	1,140	-	2.4	8.53	6.7	68	-	38.7	13,100	45,300	40.4	1,630	-	-
PNR-21	02/21/2002	9:15	60.3	10.40	-	6.53	-	-	562	685	1,970	< 4	28,300	9,280	1,060	-	2.1	7.54	6.9	66	27	-	12,900	45,800	48.1	1,410	-	-
PNR-21	05/22/2002	11:55	70.5	11.80	-	6.67	-	-	544	663	1,800	< 4	28,600	8,440	959	-	2.5	7.82	6.8	60	27	-	12,600	47,400	53.2	1,560	0.14	-
PNR-21	08/21/2002	9:00	63.1	12.70	-	6.60	-	-	553	675	1,820	< 4	29,200	8,580	980	-	2.8	7.51	6.8	74	15	18	12,900	51,200	54.2	1,690	0.15	-
PNR-21	11/05/2002	15:30	66.3	10.80	-	6.78	-	-	559	682	2,000	< 4	28,600	9,180	1,020	-	2.6	7.99	6.8	61	11	< 20	13,000	49,600	44.6	1,700	0.15	-
PNR-21	03/05/2003	14:50	62.2	10.70	-	6.69	-	-	546	666	1,900	< 4	27,000	8,450	897	-	3.2	7.64	6.7	56	13	36	12,200	46,400	33.6	2,070	0.30	-
PNR-21	05/28/2003	11:50	49.1	14.50	-	6.63	-	-	531	647	1,940	< 1	27,100	8,860	978	-	2.7	7.92	6.7	73	16	44	13,200	49,100	67.1	1,460	0.19	-
PNR-21	08/13/2003	14:05	62.8	14.10	-	7.40	-	-	560	683	1,800	< 1	28,600	217	928	-	3.0	7.71	6.6	70	16	38	13,000	48,800	68.6	1,160	0.15	-
PNR-21	11/05/2003	15:30	28.1	9.60	-	7.23	-	-	537	655	1,450	< 4	28,100	6,670	738	-	3.2	8.09	6.8	57	12	27	10,600	46,300	34	1,170	0.17	-
PNR-21	06/08/2004	12:55	-	[11] 11.90	-	6.87	-	-	580	708	1,700	< 4	28,100	7,880	881	-	3.4	7.86	6.8	67	15	43	13,200	47,800	66.7	1,690	0.20	-
PNR-21	09/14/2004	14:15	63	12.00	-	7.60	-	-	560	683	1,860	[3] < 4	27,800	[3] 8,530	942	[3] -	3.5	9.05	6.8	74	[3] 23	[3] 25	[3] 13,600	[3] 48,400	66.8	1,620	[3] 0.17	-
PNR-21	11/17/2004	12:40	74.4	11.50	-	6.89	-	-	561	685	1,940	< 4	25,600	8,730	942	-	3.5	8.72	6.7	76	19	23	13,400	45,800	68.4	1,530	0.18	-
PNR-21	03/01/2005	16:32	65.3	9.60	-	6.64	-	-	611	745	1,870	< 4	26,400	8,550	939	-	3.2	8.62	6.7	78	20	23	14,600	46,900	66	1,470	0.18	-
PNR-21	05/24/2005	18:25	68.1	10.30	-	6.88	-	-	518	631	1,770	< 4	26,600	8,030	876	-	3.4	10.2	6.7	70	15	17	13,800	47,000	65.2	1,640	0.20	-
PNR-21	08/16/2005	16:20	67.9	17.30	-	6.45	-	-	603	735	1,770	< 4	22,600	8,130	899	-	3.6	9.84	7.0	50	16	11	12,600	47,000	65.2	1,350	0.18	-
PNR-21	11/15/2005	13:21	69.4	10.70	-	6.64	-	-	516	629	1,740	< 4	27,700	7,930	869	-	3.3	10	6.8	68	17	19	14,200	45,600	66.9	1,480	0.17	-
PNR-21	02/09/2006	11:45	62.8	9.20	-	6.88	-	-	604	737	1,880	< 4	25,200	8,360	889	-	6.3	12	6.9	107	16	17	14,100	42,800	64.7	1,530	0.14	-
PNR-21	05/24/2006	17:20	51.6	11.10	-	6.63	-	-	579	706	1,690	< 4	26,300	7,600	820	-	4.1	13.7	7.5	82	18	21	13,600	42,600	64.2	1,690	0.17	-
PNR-21	08/23/2006	17:00	54.2	10.30	0.23	6.62	-	-	554	676	1,710	< 4	26,000	7,620	816	-	3.5	11.9	6.6	66	23	21	13,900	42,100	67.4	1,600	0.20	-
PNR-21	12/07/2006	14:45	62.37	9.46	0.45	6.77	-	-	565	689	1,620	< 4	24,600	7,220	773	-	3.4	12.9	6.8	59	18	17	12,800	42,500	65.5	1,700	0.20	-
PNR-21	03/15/2007	11:15	58.15	9.42	0.39	6.71	-	-	567	691	1,690	< 4	25,200	7,740	853	-	3.4	16.9	6.7	94	22.7	-	13,600	43,100	63.6	1,560	0.17	-
PNR-21	10/04/2007	11:40	59.62	9.98	0.28	6.53	-	-	559	681	1,640	[3] < 4	25,300	[3] 7,410	804	[3] -	3.9	15.4	6.6	62	[3] 21	[3] 24	[3] 13,100	[3] 42,000	64.8	1,730	[3] 0.2	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-21	03/27/2008	18:20	59.60	9.60	0.58	6.62	-	-	589	718	1,600	< 4	24,100	7,240	786	-	3.1	16.7	6.7	54	20	33	13,500	39,700	61.6	1,590	0.20	-
PNR-21	10/25/2008	15:50	62.87	9.77	0.24	6.58	-	-	586	715	1,590	< 4	23,200	7,130	771	-	3.6	19.5	6.8	58	13	29	12,700	39,500	58.7	1,810	0.20	-
PNR-21	04/21/2009	16:35	56.38	10.33	0.20	6.64	-	-	610	745	1,330	< 4	19,900	6,140	684	-	2.9	15.20	6.7	55	3.0	< 10	11,200	34,600	54.0	1,780	0.20	-
PNR-21	10/06/2009	14:00	50.72	9.84	0.35	6.48	-	-	314	383	1,270	< 4	19,900	5,900	665	-	2.7	13.8	6.9	47	21	22	10,200	29,900	47.8	1,290	< 0.1	-
PNR-21	04/19/2010	11:50	40.61	10.00	0.38	6.69	-	-	663	809	1,010	< 4	18,300	4,700	530	-	1.5	14	6.8	39	16	16	8,010	26,500	40.1	1,600	0.20	-
PNR-21	09/21/2010	16:20	35.24	9.83	1.15	6.60	-	-	694	847	862	< 4	12,800	4,040	458	-	16.0	19	7.1	36	15	17.1	6,800	21,600	33.1	1,310	0.20	-
PNR-21	05/05/2011	18:10	27.85	9.29	0.51	6.66	-	-	731	892	699	< 4	9,910	3,380	396	-	1.0	9	7.2	30	25	31	5,850	18,100	28.4	1,680	0.20	-
PNR-21	09/21/2011	15:45	30.08	9.58	0.70	6.61	19,550	-	-	-	-	-	10,400	-	-	-	-	-	-	-	-	-	-	18,100	-	-	-	-
PNR-21	05/17/2012	15:37	26.69	9.75	0.66	6.62	17,350	-	-	-	-	-	9,290	-	-	-	-	-	-	-	-	-	-	15,100	-	-	-	-
PNR-21	10/11/2012	11:50	23.97	9.81	0.86	6.60	15,570	-	-	-	-	-	8,920	-	-	-	-	-	-	-	-	-	-	15,900	-	-	-	-
PNR-21	05/08/2013	15:13	22.76	9.47	0.55	6.55	14,790	196.7	-	-	-	-	7,150	-	-	-	-	-	-	-	-	-	-	14,300	-	-	-	-
PNR-21	09/26/2013	9:11	21.44	9.50	0.12	6.55	13,937	27.9	-	-	-	-	6,970	-	-	-	-	-	-	-	-	-	-	13,200	-	-	-	-
PNR-22	08/08/2001	17:10	3.9	11.90	-	7.30	-	-	869	1,060	205	< 1	467	1,250	180	-	3.5	< 0.05	7.2	9	22.2	-	434	2,900	3.83	989	-	-
PNR-22	08/16/2001	11:35	11.2	11.30	-	7.40	-	-	853	1,040	218	< 1	463	1,340	193	-	4.0	< 0.05	7.2	9	26	-	464	2,920	3.78	959	-	-
PNR-22	11/07/2001	9:10	3.6	12.20	-	7.60	-	-	815	994	207	< 1	548	1,290	188	-	4.1	0.06	7.4	8	-	33.2	421	2,870	3.86	833	-	-
PNR-22	02/20/2002	14:10	3.4	11.30	-	7.11	-	-	790	964	205	< 4	523	1,310	195	-	3.8	< 0.05	6.9	9	27.2	-	467	2,960	4.32	943	-	-
PNR-22	05/21/2002	12:15	4.46	12.80	-	7.13	-	-	777	948	203	< 4	635	1,260	182	-	5.0	< 0.05	7.4	9	30.3	-	542	3,040	4.34	824	0.26	-
PNR-22	08/20/2002	15:35	3.4	11.30	-	7.20	-	-	785	958	217	< 4	676	1,420	213	-	5.2	0.05	7.2	7	26.8	33.1	407	3,150	4.57	924	0.25	-
PNR-22	11/05/2002	12:50	4.59	12.20	-	7.28	-	-	784	956	248	< 4	790	1,490	213	-	4.3	< 0.05	7.2	9	25.7	30.6	462	3,300	4.8	935	0.24	-
PNR-22	03/04/2003	15:10	4.57	11.20	-	7.14	-	-	753	918	258	< 4	857	1,540	218	-	5.6	< 0.05	7.0	10	23	29	487	3,430	5.14	942	0.30	-
PNR-22	05/13/2003	12:45	4.4	12.50	-	7.78	-	-	771	941	250	< 4	925	1,550	225	-	5.3	< 0.05	7.0	9	25.9	29.1	474	3,480	4.92	890	0.28	-
PNR-22	08/13/2003	9:15	4.6	14.10	-	7.86	-	-	758	924	262	< 1	977	1,590	228	-	5.2	< 0.05	6.8	9	27	37	487	3,640	5.08	766	0.25	-
PNR-22	11/05/2003	12:25	4.7	12.00	-	-	-	-	754	920	244	< 4	1,100	1,650	252	-	5.5	< 0.05	7.2	10	27.7	39.8	510	3,640	4.7	904	0.26	-
PNR-22	06/08/2004	16:10	-	13.00	-	7.31	-	-	760	927	292	< 4	1,150	1,800	259	-	5.9	< 0.05	7.1	10	26.6	34.4	489	3,910	5.24	993	0.29	-
PNR-22	09/15/2004	8:50	5.26	15.20	-	7.03	-	-	762	930	306	< 4	1,100	1,880	270	-	6.3	< 0.05	7.2	10	28.5	33.1	525	3,810	5.56	873	0.26	-
PNR-22	11/18/2004	14:35	5.2	12.10	-	7.31	-	-	743	907	319	< 4	1,150	1,920	274	-	5.4	< 0.05	7.0	11	30.6	43.4	524	3,840	5.69	906	0.26	-
PNR-22	03/01/2005	11:00	5.9	13.20	-	7.01	-	-	778	949	313	< 4	1,160	1,980	290	-	5.8	< 0.05	7.0	11	31.4	31.3	586	3,890	5.69	902	0.27	-
PNR-22	05/24/2005	10:07	8	13.00	-	6.99	-	-	647	789	303	< 4	1,130	1,880	274	-	6.2	< 0.05	6.9	11	27	36.8	557	3,960	5.57	837	0.27	-
PNR-22	08/16/2005	9:30	5.2	15.20	-	6.90	-	-	773	943	327	< 4	1,150	2,030	294	-	6.3	< 0.05	7.2	8	28.9	26.4	547	3,890	5.72	918	0.26	-
PNR-22	11/15/2005	13:40	5.6	10.40	-	6.38	-	-	687	838	340	< 4	1,180	2,130	310	-	5.2	< 0.05	7.2	7	29.4	30	588	3,760	5.7	923	0.25	-
PNR-22	02/07/2006	10:30	5.5	11.90	-	7.13	-	-	754	920	323	< 4	1,080	2,000	290	-	6.3	< 0.05	7.0	10	29.8	34.9	565	3,790	5.6	864	0.22	-
PNR-22	05/23/2006	13:05	5.417	13.26	-	6.96	-	-	729	890	312	< 4	1,150	1,960	287	-	5.5	< 0.05	7.8	11	29.6	48.4	576	3,450	5.71	938	0.24	-
PNR-22	08/22/2006	18:00	5.8	10.70	0.24	7.31	-	-	698	852	333	< 4	1,110	2,050	295	-	5.8	< 0.05	7.0	11	30.4	33	580	3,970	5.9	945	0.20	-
PNR-22	12/06/2006	9:55	5.639	9.87	-	7.07	-	-	708	864	324	< 4	1,080	1,960	280	-	5.8	< 0.05	7.0	10	29.4	31.1	546	3,830	5.9	961	0.20	-
PNR-22	03/13/2007	15:25	4.9	10.30	-	6.86	-	-	707	862	317	< 4	1,010	1,970	287	-	6.4	< 0.05	7.1	10	34.4	-	563	3,800	5.74	875	0.22	-
PNR-22	10/03/2007	16:45	6.59	11.60	-	7.20	-	-	712	869	301	< 4	994	1,850	267	-	6.6	< 0.05	7.0	9	29.3	31.7	505	3,780	5.81	982	0.2	-
PNR-22	03/26/2008	17:45	5.489	10.26	0.25	6.91	-	-	729	890	294	< 4	932	1,820	263	-	6.2	< 0.05	7.1	8	29.5	32.2	544	3,690	5.46	965	0.20	-
PNR-22	10/22/2008	18:15	5.267	10.38	0.39	7.06	-	-	724	883	296	< 4	895	1,850	268	-	6.7	< 0.05	7.2	9	30	34.6	532	3,720	3.97	1,060	0.20	-
PNR-22	04/18/2009	13:10	5.329	10.44	0.21	6.79	-	-	713	870	278	< 4	895	1,700	244	-	6.3	0.05	7.1	9	28.1	33.0	482	2,970	5.2	958	0.30	-
PNR-22	10/02/2009	12:25	5.242	10.43	0.28	6.92	-	-	717	875	279	< 4	748	1,720	249	-	6.0	0.02	7.1	9	29.3	32	509	3,350	4.96	876	0.20	-
PNR-22	04/13/2010	14:35	4.726	10.16	0.61	6.93	-	-	703	858	264	< 4	742	1,640	238	-	5.3	0.54	7.0	10	30.2	30	540	3,390	4.81	1,030	0.20	-
PNR-22	09/18/2010	10:45	4.781	10.57	0.88	6.96	-	-	729	889	252	< 4	631	1,560	226	-	4.3	0.04	7.2	10	29.2	30.8	499	3,320	4.67	939	0.30	-
PNR-22	05/05/2011	15:30	4.521	10.23	0.42	6.70	-	-	744	907	258	< 4	552	1,650	243	-	4.4	0.06	7.2	9	30	31.9	472	3,420	4.31	1,250	0.30	-
PNR-22	09/22/2011	10:55	5.342	10.06	0.43	6.54	3,473	-	-	-	-	-	613	-	-	-	-	-	-	-	-	-	-	3,650	-	-	-	-
PNR-22	05/17/2012	13:41	5.289	10.50	0.44	6.74	3,438	-	-	-	-	-	687	-	-	-	-	-	-	-	-	-	-	3,790	-	-	-	-
PNR-22	10/13/2012	13:45	5.097	9.60	0.83	6.47	3,313	-87.7	-	-	-	-	706	-	-	-	-	-	-	-	-	-	-	3,770	-	-	-	-
PNR-22	05/08/2013	17:52	5.073	10.61	0.91	7.18	3,298	-92.2	-	-	-	-	503	-	-	-	-	-	-	-	-	-	-	4,050	-	-	-	-
PNR-22	09/27/2013	10:43	5.209	10.46	0.34	6.83	3,387	-19.0	-	-	-	-	593	-	-	-	-	-	-	-	-	-	-	4,290	-	-	-	-
PNR-23	08/09/2001	17:30	90.5	80.10	-	7.30	-	-	<1	< 1	850	< 1	41,300	3,270	275	-	14.1	< 0.05	3.7	411	59.1	-	20,300	62,400	77.3	1,480	-	-
PNR-23	08/14/2001	10:30	98.6	80.40	-	6.50	-	-	192	234	1,030	< 1	45,000	3,730	282	-	15.9	< 0.05	6.5	480	68.2	-	23,800	68,000	74.2	1,600	-	-
PNR-23	11/08/2001	13:15	88.7	85.60	-	-	-	-	271	331	2,110	< 1	33,600	8,520	789	-	22.9	3.82	6.4	312	-	114	18,200	62,600	47	1,450	-	-
PNR-23	02/21/2002	12:25	100.1	72.10	-	5.86	-	-	214	262	1,770	< 4	41,500	6,780	572	-	24.5	0.05	6.6	313	73	-	20,400	63,700	58.7	1,180	-	-
PNR-23	05/23/2002	11:15	112.9	82.20	-	6.14	-	-	188	229	1,210	< 4	42,200	4,570	376	-	18.8	< 0.05	6.4	348	95	-	21,100	68,200	68.3	1,490	2.13	-
PNR-23	08/21/2002	12:55	102.9	70.20	-	6.10	-	-	180	219	1,220	< 4	43,300	4,670	392	-	18.1	< 0.05	6.6	293	58	78	18,000	70,100	68.5	1,710	2.26	-
PNR-23	11/06/2002	12:15	115.5	71.20	-	6.10	-	-	195	238	1,180	< 4	36,800	4,290	324	-	17.4	< 0.05	6.5	410	63	71	22,100	67,300	60.2	1,670	2.20	-
PNR-23	03/05/2003	11:20	115	72.50	-	6.94	-	-	198	242	1,120	< 4	37,400	3,930	276	-	15.9	< 0.05	6.6	373	55	54	21,700	66,600	48.5	1,830	2.40	-
PNR-23	05/28/2003	14:40	102.4	72.00	-	6.28	-	-	209	255	1,080	< 1	40,900	3,920	296	-	15.0	< 0.05	6.4	474	54	73	23,800	68,100	93.8	1,420	2.56	-
PNR-23	08/14/2003	8:43	98.3	70.10	-	6.14	-	-	215	263	1,130	< 1	39,900	4,120	314	-	17.0	0.1	6.6	433	54	63	22,100	66,300	87.6	1,030	2.43	-
PNR-23	11/06/2003	10:10	107	73.20	-	5.60	-	-	209	255	938	< 4	40,900	3,450	270	-	17.6	< 0.05	6.5	408	46	51	19,500	65,700	42.2	1,140	2.27	-
PNR-23	03/17/2004	11:40	143	67.80	-	5.57	-	-	224	273	1,260	< 1	42,600	4,630	364	-	16.8	< 0.05	6.6	460	56	60	23,700	66,000	91.7	1,080	2.34	-
PNR-23	06/09/2004	14:10	99.9	58.30	-	6.40	-	-	230	281	1,170	< 4	41,800	4,340	344	-	16.4	< 0.05	6.7	446	51	53	23,900	63,900	93.3	1,610	3.30	-
PNR-23	09/15/2004	17:40	110.3	60.90	-	6.34	-	-	245	299	1,250	< 4	41,800	4,710	386	-	18.1	< 0.05	6.8	403	52	60	21,900	66,100	92.6	1,530	2.82	-
PNR-23	11/18/2004	11:00	99	59.60	-	6.47	-	-	242	295	1,150	< 4	35,800	4,390	368	-	15.7	0.1	6.5	451	49	52	21,800	63,200	92.2	1,250	2.76	-
PNR-23	03/02/2005	11:35	90	64.80	-	6.18	-	-	278	339	1,240	< 4	38,800	4,700	392	-	16.6	0.09	6.5	399	60	45	23,800	64,700	92.4	1,330	2.64	-
PNR-23	05/25/2005	13:00	93.5	61.00	-	6.09	-	-	244	298	1,220	< 4	39,800	4,600	377	-	17.5	< 0.05	6.5	444	49	47	23,800	62,500	91.1	2,600	2.64	-
PNR-23	08/17/2005	15:20	100.1	60.40	-	6.04	-	-	287	350	1,140	< 4	38,800	4,370	368	-	17.3	< 0.05	6.6	313	41	47	20,200	62,000	91.1	1,360	2.46	-
PNR-23	11/16/2005	12:15	89.7	59.20	-	6.29	-	-	258	315	1,230	< 4	39,400	4,660	385	-	17.3	< 0.05	6.7	478	53	50	24,900	59,600	31.5	1,240	2.34	-
PNR-23	02/09/2006	16:00	102.2	55.60	-	6.43	-	-	307	375	978	< 4	35,300	3,620	285	-	15.7	< 0.05	6.7	346	49	49	21,300	53,800	85.3	1,180	2.40	-
PNR-23	05/25/2006	11:15	79.87	56.62	-	6.40	-	-	310	378	1,050	< 4	35,400	3,940	320	-	18.3	< 0.05	7.4	326	51	52	21,800	55,000	83.8	1,120	2.05	-
PNR-23	08/24/2006	10:18	97.8	54.20	-	6.82	-	-	308	376	914	< 4	33,600	3,420	276	-	14.0	< 0.05	6.6	298	49	49	20,200	53,500	85.2	1,070	2.10	-
PNR-23	12/08/2006	10:10	65.5	53.70	-	6.55	-	-	341	416	816	< 4	31,800	3,130	266	-	16.0	< 0.05	6.7	274	48	49	18,800	51,500	80	1,050	2.60	-
PNR-23	03/14/2007	15:00	95.1	50.60	-	6.46	-	-	397	485	802	< 4	28,300	3,210	293	-	13.9	< 0.05	6.6	290	206	-	18,400	46,500	73.4	889	2.54	-
PNR-23	10/05/2007	12:30	64.1	46.40	-	6.06	-	-	514	627	649	< 4	25,300	2,620	242	-	10.2	< 0.05	6.8	201	50	46	14,100	39,700	62.1	1,080	2.6	-
PNR-23	03/27/2008	16:05	55.80	49.60	-	6.99	-	-	583	711	524	< 4	21,100	2,100	192	-	8.6	< 0.05	6.8	174	47	49	12,600	35,100	55.9	994	3.40	-
PNR-23	10/27/2008	14:56	45.38	46.32	0.03	6.90	-	-	652	796	408	< 4	16,900	1,590	139	-	8.6	< 0.05	7.2	140	44	48	11,100	28,000	44.6	1,280	4.80	-
PNR-23	04/16/2009	15:00	36.45	44.28	0.24	6.90	-	-	740	902	254	< 4	12,300	1,070	106	-	4.9	< 0.05	7.4	110	39.0	34.0	8,030	22,000	36.3	1,150	6.30	-
PNR-23	10/02/2009	12:00	30.90	43.89	0.10	6.89	-	-	770	939	216	< 4	10,700	944	98	-	4.7	< 0.01	7.3	86	37	37	6,600	18,000	30.2	827	5.30	-
PNR-23	04/15/2010	15:40	17.43	42.56	0.18	7.31	-	-	901	1,100	95	< 4	4,950	450	52	-	2.8	< 0.01	7.4	48	38	38	3,720	9,810	16.1	881	7.20	-
PNR-23	09/21/2010	10:30	10.88	41.02	0.44	7.39	-	-	1010	1,230	39	< 4	2,370	175	19	-	1.7	0.02	8.0	30	36.8	41.5	2,460	6,940	10.4	830	11.00	-
PNR-23	05/05/2011	10:30	8.975	38.56	0.22	7.60	-	-	1020	1,240	25	< 4	1,500	109	12	-	0.7	0.03	7.9	20	31	34.7	1,800	5,210	82.8	1,070	2.40	-
PNR-23	09/23/2011	10:43	7.792	37.23	0.48	7.63	5,072	-	-	-	-	-	1,310	-	-	-	-	-	-	-	-	-	-	4,870	-	-	-	-
PNR-23	05/17/2012	12:42	8.852	34.26	0.19	-	-	-	-	-	-	-	832	-	-	-	-	-	-	-	-	-	-	4,670	-	-	-	-
PNR-23	10/25/2012	9:20	7.827	33.22	2.40	7.74	5,094	-74.9	-	-	-	-	1,360	-	-	-	-	-	-	-	-	-	-	4,820	-	-	-	-
PNR-23	05/08/2013	17:09	7.416	32.39	0.12	7.89	4,821	146.9	-	-	-	-	1,070	-	-	-	-	-	-	-	-	-	-	4,440	-	-	-	-
PNR-23	09/26/2013	11:49	6.658	30.67	0.04	8.00	4,330	-8.4	-	-	-	-	915	-	-	-	-	-	-	-	-	-	-	4,300	-	-	-	-
PNR-24	08/14/2001	12:00	97.5	73.40	-	6.50	-	-	237	289	997	< 1	41,100	3,240	180	-	14.8	< 0.05	6.8	470	73.2	-	24,900	67,700	73.8	1,730	-	-
PNR-24	08/14/2001	18:20	101.8	80.30	-	6.60	-	-	231	282	1,040	< 1	43,400	3,450	206	-	14.9	< 0.05	6.8	500	65	-	23,900	67,000	51.3	1,730	-	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Flouride mg/L	Iron mg/L
PNR-24	11/08/2001	13:40	84.5	84.40	-	-	-	-	479	584	1,090	< 1	34,600	3,750	248	-	14.5	< 0.05	6.5	379	-	320	19,400	61,000	49.2	1,690	-	-
PNR-24	02/21/2002	13:55	120.4	67.10	-	6.24	-	-	235	287	1,020	< 4	44,700	3,160	150	-	17.2	< 0.05	6.8	498	163	-	23,500	68,500	62.6	1,450	-	-
PNR-24	05/23/2002	11:50	113.3	78.30	-	6.43	-	-	258	315	842	< 4	44,700	2,760	159	-	14.5	< 0.05	6.7	404	207	-	21,300	69,000	71.2	1,940	3.71	-
PNR-24	08/21/2002	13:10	104.6	70.00	-	6.30	-	-	175	214	1,070	< 4	44,400	3,360	170	-	16.0	< 0.05	6.7	435	59	199	21,600	72,200	73.9	1,470	3.67	-
PNR-24	11/06/2002	12:32	113.5	69.00	-	6.55	-	-	171	208	1,120	< 4	36,900	3,700	219	-	17.0	< 0.05	6.7	452	50	225	22,100	68,300	61.1	1,670	3.53	-
PNR-24	03/05/2003	11:40	114	68.50	-	7.03	-	-	195	238	1,210	< 4	41,300	4,190	283	-	16.8	0.07	6.6	401	62	219	22,500	66,200	47.3	1,740	3.50	-
PNR-24	05/28/2003	14:50	103.5	69.40	-	6.58	-	-	198	242	1,170	< 1	40,800	4,190	306	-	17.9	< 0.05	6.9	438	55	132	23,300	68,400	94	1,440	3.26	-
PNR-24	08/14/2003	13:08	96.2	65.20	-	6.49	-	-	228	278	1,180	< 1	41,300	11,300	313	-	17.8	< 0.05	6.8	402	58	76	22,000	68,100	88.6	1,130	3.13	-
PNR-24	11/06/2003	11:00	108.6	69.50	-	5.85	-	-	187	228	948	< 4	40,900	3,410	254	-	19.3	< 0.05	6.8	385	47	89	19,500	64,700	41.9	1,080	3.26	-
PNR-24	03/17/2004	12:10	130	63.30	-	5.67	-	-	210	257	995	< 1	36,900	3,570	256	-	14.4	< 0.05	6.8	371	56	142	20,000	56,200	80.1	956	3.64	-
PNR-24	06/09/2004	14:20	mnw	56.90	-	6.69	-	-	303	369	751	< 4	32,500	2,760	213	-	12.7	< 0.05	6.9	311	52	110	18,000	49,700	75.8	1,160	4.32	-
PNR-24	09/15/2004	18:05	68.5	55.00	-	6.48	-	-	707	862	476	< 4	25,100	1,890	171	-	10.2	< 0.05	7.0	235	57	125	14,200	40,200	61.4	407	4.56	-
PNR-24	11/18/2004	11:05	54.5	59.60	-	6.88	-	-	869	1,060	332	< 4	22,000	1,360	129	-	7.7	0.12	6.9	254	64	73	12,400	34,400	55	273	4.62	-
PNR-24	03/02/2005	13:25	40.2	60.00	-	6.65	-	-	1050	1,280	248	< 4	18,500	1,100	117	-	6.9	0.05	7.1	174	59	63	11,800	29,800	46.5	211	4.86	-
PNR-24	05/25/2005	13:45	38.4	56.60	-	6.38	-	-	1010	1,230	181	< 4	14,900	840	94	-	5.1	< 0.05	7.0	164	55	80	9,980	24,000	41	106	5.04	-
PNR-24	08/17/2005	16:05	37.7	55.60	-	6.59	-	-	1250	1,520	121	< 4	12,600	583	68	-	4.8	< 0.05	7.2	93	52	70	7,910	22,100	36.2	43	5.58	-
PNR-24	11/16/2005	16:15	34.4	52.70	-	7.02	-	-	1310	1,600	90	< 4	10,600	450	55	-	3.3	< 0.05	7.2	120	60	101	7,410	17,600	29.7	9	7.08	-
PNR-24	02/08/2006	13:30	27.2	50.00	-	7.10	-	-	1440	1,760	72	< 4	8,610	309	32	-	3.7	< 0.05	7.1	109	57	57	6,220	15,200	26.1	12	8.76	-
PNR-24	05/24/2006	12:55	26	49.80	-	7.08	-	-	1430	1,750	41	< 4	7,840	191	22	-	2.5	< 0.05	7.9	67	50	53	5,330	12,800	22.8	14	10.80	-
PNR-24	08/24/2006	11:22	21.7	51.10	-	7.95	-	-	1490	1,820	29	< 4	6,700	135	15	-	2.5	< 0.05	7.4	61	48	46	4,850	11,800	21.5	18	14.20	-
PNR-24	12/08/2006	10:50	15.5	49.40	-	7.32	-	-	1450	1,770	24	< 4	5,660	109	12	-	2.3	0.06	7.6	52	45.4	44	4,350	10,900	19	53	17.00	-
PNR-24	03/14/2007	15:40	21.8	47.90	-	7.23	-	-	1550	1,880	30 B	< 4	5,110	127	12	-	2.0	< 0.05	7.8	59	78.1	-	4,080	9,920	17.1	62	15.00	-
PNR-24	05/17/2012	13:18	8.145	30.44	0.21	-	-	-	-	-	-	-	1,410	-	-	-	-	-	-	-	-	-	-	4,450	-	-	-	-
PNR-24	10/25/2012	10:03	6.830	27.87	0.19	7.27	4,480	-80.9	-	-	-	-	852	-	-	-	-	-	-	-	-	-	-	5,050	-	-	-	-
PNR-24	05/09/2013	9:16	7.299	28.52	0.20	7.12	4,746	167.1	-	-	-	-	808	-	-	-	-	-	-	-	-	-	-	5,460	-	-	-	-
PNR-24	06/11/2013	9:23	6.499	27.96	0.56	7.08	4,233	-	-	-	-	-	759	-	-	-	-	-	-	-	-	-	-	5,120	-	-	-	-
PNR-24 Dup	06/11/2013	9:23	-	-	-	-	-	-	-	-	-	-	768	-	-	-	-	-	-	-	-	-	-	5,270	-	-	-	-
PNR-24	09/24/2013	12:43	6.917	27.94	0.09	7.44	4,495	0.3	-	-	-	-	994	-	-	-	-	-	-	-	-	-	-	4,790	-	-	-	-
PNR-25	08/14/2001	13:15	102.9	76.70	-	6.60	-	-	255	311	924	< 1	39,900	2,890	140	-	15.8	< 0.05	6.8	510	68.6	-	24,000	70,500	75.6	1,730	-	-
PNR-25	08/14/2001	19:05	99.2	81.10	-	6.80	-	-	246	301	1,020	< 1	45,400	3,180	160	-	15.8	< 0.05	6.8	560	65.3	-	26,600	70,300	76.8	1,550	-	-
PNR-25	11/08/2001	10:15	-	84.40	-	-	-	-	528	644	1,660	< 1	38,300	6,000	448	-	18.5	< 0.05	6.5	433	-	276	21,200	65,600	48.5	2,260	-	-
PNR-25	02/21/2002	15:30	103.1	72.60	-	6.05	-	-	237	289	2,430	< 4	40,100	9,350	797	-	25.6	< 0.05	6.7	278	200	-	18,700	64,500	57.9	1,280	-	-
PNR-25	05/22/2002	16:50	34.8	71.10	-	6.80	-	-	930	1,130	452	< 4	11,500	1,770	156	-	10.4	< 0.05	7.0	78	243	-	5,600	18,700	28.9	756	4.20	-
PNR-25	08/21/2002	14:40	11.8	61.40	-	7.10	-	-	1040	1,270	70	< 4	3,560	384	51	-	1.4	< 0.05	7.4	31	59	312	2,040	6,790	11.9	< 30	6.52	-
PNR-25	11/06/2002	14:55	14.5	56.70	-	7.14	-	-	877	1,070	48	< 4	3,110	298	43	-	0.9	< 0.05	7.5	33	45	123	2,140	6,330	13	< 10	8.00	-
PNR-25	03/05/2003	12:45	13.1	55.00	-	7.91	-	-	585	713	47	< 4	3,590	245	31	-	1.0	< 0.05	7.4	32	37	285	2,340	6,800	12.2	6	9.20	-
PNR-25	05/28/2003	15:25	11.7	53.60	-	7.19	-	-	506	618	39	< 1	3,600	226	31	-	0.8	< 0.05	7.5	32	30	301	2,200	6,400	11.8	< 3	11.40	-
PNR-25	08/14/2003	10:00	11	50.60	-	7.32	-	-	459	560	36	< 1	4,510	2,200	31	-	0.9	< 0.05	7.6	26	31	80	2,140	6,590	10.4	< 10	11.20	-
PNR-25	11/05/2003	15:15	12.5	52.20	-	6.72	-	-	513	626	42	< 4	4,610	256	37	-	1.6	< 0.05	7.5	35	27	47	2,360	7,090	11.6	14	9.30	-
PNR-25	03/17/2004	14:15	15	43.60	-	6.50	-	-	461	562	49	< 1	4,760	264	34	-	1.4	< 0.05	7.4	33	27	53	2,480	7,130	12.2	4	9.36	-
PNR-25	06/08/2004	13:00	11.7	38.90	-	7.53	-	-	601	733	45	< 4	4,090	254	34	-	1.4	< 0.05	7.7	36	26.4	50	3,040	7,490	12.4	167	9.18	-
PNR-25	09/15/2004	16:45	13	40.40	-	7.55	-	-	562	685	52	< 4	3,980	323	47	-	1.6	< 0.05	7.7	34	23.3	46	2,440	6,880	12.00	79	7.44	-
PNR-25	11/18/2004	9:00	12.3	37.30	-	7.69	-	-	554	676	49	< 4	3,750	322	48	-	1.5	0.07	7.7	37	23.2	26.9	2,360	6,590	12	39	7.56	-
PNR-25	03/02/2005	13:00	9.7	37.10	-	7.53	-	-	676	824	39	< 4	3,570	262	40	-	1.3	0.25	7.9	29	22	23	2,510	6,630	11.5	106	7.80	-
PNR-25	05/25/2005	11:15	9.7	34.70	-	7.50	-	-	487	588	44	< 4	4,250	311	49	-	1.5	< 0.05	7.9	22	25.7	28.8	2,400	6,270	10.8	821	8.28	-
PNR-25	08/17/2005	18:20	10.4	33.30	-	7.71	-	-	522	637	40	< 4	2,960	289	46	-	1.2	< 0.05	7.8	23	17.3	18.8	1,980	5,550	10	27	7.92	-
PNR-25	11/16/2005	13:25	11.6	32.50	-	7.96	-	-	492	586	36	7	2,890	287	48	-	1.2	< 0.05	7.9	21	19.8	19.6	2,010	4,910	9.2	46	7.20	-
PNR-25	02/08/2006	11:15	8	29.90	-	7.85	-	-	545	665	36	< 4	2,530	239	36	-	1.2	< 0.05	7.7	25	19.9	39.5	1,860	4,780	8.5	10	7.32	-
PNR-25	05/24/2006	11:45	8.3	29.90	-	7.88	-	-	622	759	28	< 4	2,450	182	27	-	1.0	0.07	8.2	22	19.7	47.2	1,790	4,200	8.26	81	7.15	-
PNR-25	08/24/2006	12:00	6.8	29.70	-	8.33	-	-	527	643	26	< 4	2,180	191	30	-	1.2	< 0.05	8.0	23	18.4	18.8	1,600	4,190	7.9	55	6.32	-
PNR-25	12/08/2006	11:30	5.3	29.20	-	7.36	-	-	547	667	34	< 4	2,060	239	38	-	1.2	< 0.05	8.0	23	18.6	18	1,500	4,180	7.7	117	5.90	-
PNR-25	03/15/2007	10:53	6.1	29.20	-	7.81	-	-	513	626	49	< 4	2,090	368	59	-	1.4	< 0.05	7.7	26	21.3	-	1,430	3,820	7.07	26	4.87	-
PNR-26	08/14/2001	18:00	-	79.20	-	-	-	-	144	176	910	< 1	45,000	2,820	133	-	14.4	< 0.05	7.2	517	63.1	-	23,800	68,700	74.7	1,660	-	-
PNR-26	08/22/2001	10:00	98	75.00	-	-	-	-	159	194	803	< 1	42,600	2,490	118	-	13.6	< 0.05	7.5	499	61.9	-	23,400	68,600	65.8	1,670	-	-
PNR-26	11/08/2001	14:15	-	83.30	-	-	-	-	640	781	1,070	< 1	40,900	3,740	259	-	16.4	0.16	7.5	437	-	168	22,800	67,200	51.6	1,170	-	-
PNR-26	02/21/2002	16:00	125	65.00	-	6.42	-	-	234	285	1,310	< 4	40,800	4,380	269	-	18.4	< 0.05	6.9	453	100	-	22,300	67,000	61.2	1,080	-	-
PNR-26	05/23/2002	11:15	105.7	75.60	-	6.68	-	-	177	215	1,220	< 4	42,400	4,210	284	-	18.4	< 0.05	6.9	392	87	-	20,800	67,400	67.2	1,530	2.72	-
PNR-26	08/21/2002	16:00	100.3	67.40	-	6.40	-	-	301	367	1,360	< 4	40,600	4,880	361	-	17.5	< 0.05	6.7	403	59	167	15,300	69,100	50.7	1,340	2.65	-
PNR-26	11/06/2002	16:20	107.2	62.70	-	6.35	-	-	181	221	1,450	< 4	36,000	5,080	356	-	16.8	< 0.05	6.7	509	53	101	22,900	65,300	57.5	1,610	2.57	-
PNR-26	03/05/2003	14:00	33	64.00	-	7.60	-	-	1470	1,800	108	< 4	8,400	546	67	-	3.8	< 0.05	7.4	72	58	109	5,290	15,600	27.4	19	5.50	-
PNR-26	05/28/2003	16:35	27.6	61.20	-	7.09	-	-	1500	1,830	62	< 1	8,060	464	75	-	2.3	< 0.05	7.4	74	57	85	4,990	14,800	25.6	< 5	6.80	-
PNR-26	08/14/2003	10:45	27.2	56.80	-	6.86	-	-	876	1,070	36	< 1	8,960	3,810	51	-	3.0	0.09	7.4	49	45	101	4,650	14,300	18.9	< 10	10.50	-
PNR-26	11/06/2003	12:30	37.5	63.70	-	7.33	-	-	1480	1,800	17	< 4	7,010	151	26	-	2.9	0.22	7.8	48	45	56	4,450	11,700	18.5	< 1	10.30	-
PNR-26	03/17/2004	14:15	40	49.10	-	6.90	-	-	1490	1,710	11	53	6,110	82	13	-	1.8	< 0.05	7.7	32	36	52	3,620	10,000	16	< 1	14.40	-
PNR-26	06/09/2004	16:00	-	44.30	-	7.76	-	-	1310	1,590	12	< 4	4,710	67	9	-	1.7	< 0.05	7.9	34	29.1	32	3,750	9,140	14.2	< 50	11.20	-
PNR-26	09/16/2004	9:50	13.5	45.70	-	7.52	-	-	1350	1,610	7	23	3,880	45	6	-	1.5	< 0.05	8.0	27	25.4	33	3,020	7,860	13.4	< 3	8.90	-
PNR-26	11/18/2004	12:25	12.9	43.20	-	7.99	-	-	1130	1,370	8	< 4	3,690	47	7	-	1.6	0.33	8.0	29	26.2	128	2,730	7,250	12.6	< 1	9.30	-
PNR-26	03/02/2005	16:10	12.1	42.50	-	7.89	-	-	1230	1,490	5	5	3,280	32	5	-	1.8	0.12	8.0	22	23	26	2,660	6,630	11.3	< 1	9.10	-
PNR-26	05/25/2005	15:15	6.3	38.70	-	7.38	-	-	990	1,200	12	5	3,000	53	5	-	1.6	< 0.05	8.2	19	19.3	23.6	2,230	6,170	10.2	< 1	9.80	-
PNR-26	08/17/2005	18:00	9.3	40.10	-	7.25	-	-	1090	1,330	13	< 4	2,900	54	5	-	1.2	< 0.05	8.0	18	19.6	21	2,200	5,990	10.3	2	9.40	-
PNR-26	11/16/2005	14:55	5.5	34.70	-	7.71	-	-	884	1,080	10	< 4	2,780	53	7	-	1.6	< 0.05	7.6	14	22.5	38.3	2,270	5,510	10.4	2	9.10	-
PNR-26	02/08/2006	15:10	4	31.80	-	7.47	-	-	877	1,070	14	< 4	2,640	59	6	-	1.2	< 0.05	7.1	17	20.1	107	2,070	5,280	9.4	13	8.90	-
PNR-26	05/24/2006	14:10	-	-	-	-	-	-	986	1,200	49	< 4	6,310	252	31	-	2.4	< 0.05	8.0	58	23	35	4,530	11,100	19.9	845	2.71	-
PNR-26	08/24/2006	13:30	-	32.20	-	7.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PNR-27	08/21/2001	15:35	27.6	10.70	-	-	-	-	592	722	1,790	< 1	10,300	9,790	1,290	-	< 0.1	28.8	7.1	37	24.4	-	2,440	21,600	23.1	2,020	-	-
PNR-27	09/05/2001	15:15	25.9	12.30	-	7.00	-	-	594	725	1,990	< 1	10,000	10,600	1,370	-	< 0.1	27.5	6.8	39	20.9	-	2,700	20,400	25	1,940	-	-
PNR-27	11/06/2001	15:30	28.1	10.00	-	7.10	-	-	569	694	1,960	< 1	10,900	10,700	1,400	-	< 0.1	29.7	6.7	40	-	43	2,840	21,200	27.1	1,750	-	-
PNR-27	02/20/2002	17:02	27.5	10.50	-	6.66	-	-	628	767	1,970	< 4	11,400	10,600	1,390	-	< 0.1	27.2	6.8	54	27	-	3,130	21,000	27.1	1,530	-	-
PNR-27	05/21/2002	18:12	32.1	13.70	-	6.65	-	-	589	719	1,790	< 4	12,000	9,650	1,260	-	< 0.1	34.2	6.8	40	35	-	2,990	23,800	29.9	1,940	0.17	-
PNR-27	08/20/2002	19:20	29.8	14.50	-	6.90	-	-	580	708	1,900	< 4	12,600	9,710	1,210	-	< 0.1	31.7	6.9	32	26	38	2,850	25,600	28.2	1,850	0.17	-
PNR-27	11/06/2002	9:55	32.7	11.30	-	6.84	-	-	583	712	2,090	< 4	11,200	11,000	1,400	-	< 0.1	31.2	6.8	42	22	30	3,450	24,200	26	1,820	0.17	-
PNR-27	03/05/2003	11:15	30.3	10.10	-	6.73	-	-	567	691	2,060	< 4	12,900	10,800	1,370	-	< 0.1	33.5	6.6	43	26	25	3,740	22,400	19.5	2,080	0.20	-
PNR-27	05/28/2003	11:00	25.4	14.40	-	6.60	-	-	589	718	1,990	< 1	12,200	10,400	1,330	-	< 0.1	34	6.7	57	26	33	3,640	25,500	34.1	1,620	0.20	-
PNR-27	08/13/2003	13:35	32.7	15.10	-	7.50	-	-	577	705	1,900	< 1	13,000	10,200	1,320	-	< 0.1	32.5	6.6	54	26	27	3,660	24,400	31.7	1,280	0.17	-
PNR-27	11/05/2003	11:45	41.7	9.10	-	7.43	-	-	568	693	1,760	< 4	13,100	10,000	1,370	-	< 0.1	35.1	6.8	53	24	48	3,760	23,300	19.6	1,430	0.18	-
PNR-27	06/08/2004	11:50	-	11.50	-	6.91	-	-	577	704	1,930	< 4	14,000	10,400	1,340	-	< 0.1	30.7	6.7	46	26	30	4,480	26,200	36.7	1,920	0.21	-
PNR-27	09/14/2004	13:05	33.9	11.70	-	7.65	-	-	525	640	1,990	< 4	13,100	10,500	1,340	-	< 0.1	30.9	6.8	58	29	31	4,320	27,500	36.5	1,760	0.26	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-27	11/17/2004	10:38	39.5	10.60	-	6.80	-	-	575	701	2,010	< 4	14,600	10,600	1,360	-	< 0.1	30.8	6.6	56	32	35	4,630	24,800	37.3	1,830	0.20	-
PNR-27	03/01/2005	15:33	36.7	9.50	-	6.67	-	-	612	747	2,090	< 4	14,700	11,100	1,420	-	< 0.1	30	6.8	48	28	33	5,060	28,200	36.7	1,770	0.19	-
PNR-27	05/24/2005	15:33	24.1	10.40	-	6.75	-	-	519	633	1,980	< 4	13,500	10,200	1,280	-	< 0.1	33.3	6.7	50	22	23	4,920	28,400	37.6	1,840	0.22	-
PNR-27	08/16/2005	17:08	38.3	10.70	-	6.62	-	-	600	732	2,080	< 4	14,300	11,000	1,400	-	< 0.1	39.6	6.7	39	29	28	4,850	28,000	37.9	1,810	0.19	-
PNR-27	11/15/2005	16:35	41.6	10.00	-	6.61	-	-	526	642	2,290	< 4	15,200	12,100	1,550	-	< 0.1	35.4	6.8	67	31	28	6,000	27,200	39	1,790	0.18	-
PNR-27	02/08/2006	17:10	38	9.00	-	7.19	-	-	597	729	2,160	< 4	13,900	11,300	1,440	-	< 0.1	30.6	6.9	64	28	27	5,460	25,200	47	1,740	0.14	-
PNR-27	05/23/2006	16:57	36.2	9.80	-	6.68	-	-	575	701	2,030	< 4	15,200	10,800	1,400	-	< 0.1	39.4	7.4	70	27	29	5,580	27,900	39.1	1,770	0.18	-
PNR-27	08/23/2006	15:01	24.7	11.00	0.24	6.63	-	-	550	671	2,070	< 4	15,000	10,800	1,370	-	< 0.1	29.3	6.6	47	31	28	5,390	29,500	41.2	1,780	0.20	-
PNR-27	12/07/2006	14:15	39.09	9.44	0.27	6.89	-	-	565	690	2,100	< 4	14,200	10,800	1,350	-	< 0.1	34.4	6.8	47	27	28	5,490	27,900	41.6	1,730	0.20	-
PNR-27	03/14/2007	16:50	39.0	9.20	-	6.75	-	-	559	682	2,060	< 4	14,700	10,800	1,370	-	< 0.1	33.2	6.6	51	247	-	5,660	28,700	40.1	1,680	0.17	-
PNR-27	10/03/2007	12:50	38.40	10.39	1.09	6.22	-	-	562	686	1,920 [3]	< 4	15,100	10,000	1,270 [3]	-	< 0.1	31.8	6.6	46	28 [3]	32	5,410	27,300	41.7	1,900 [3]	0.2	-
PNR-27	03/27/2008	17:10	39.74	9.40	0.23	6.55	-	-	579	707	2,000 [3]	< 4	15,500	10,400	1,310 [3]	-	< 0.1	32.9	6.5	53	32 [3]	29	5,900	27,200	41.2	1,690 [3]	0.20	-
PNR-27	10/25/2008	14:45	43.05	9.69	0.44	6.56	-	-	582	710	1,970	< 4	14,900	10,200	1,290	-	< 0.1	38.6	6.8	44	27	32	6,130	28,300	39.9	1,910	0.20	-
PNR-27	04/19/2009	12:50	43.95	10.80	0.63	6.43	-	-	567	691	1,950	< 4	15,400 [3]	9,990	1,240	-	< 0.1	29.30	6.7	50	19.0 [3]	21.0 [3]	6,240	23,900	42.6	1,750 [3]	0.20	-
PNR-27	10/06/2009	11:40	40.12	9.76	0.37	6.40	-	-	569	694	1,960	< 4	14,600	10,100	1,270	-	< 0.05	43.8	6.8	43	31	29	5,470	24,100	38	1,350	0.20	-
PNR-27	04/19/2010	9:45	39.20	10.08	0.99	6.55	-	-	558	680	2,000 [3]	< 4	16,400 [3]	10,600	1,350 [3]	-	< 0.05	40.7 [3]	6.7	45	26 [3]	17 [3]	5,670	27,800	38.8	1,460 [3]	0.20	-
PNR-27	09/21/2010	13:25	38.44	9.67	0.93	6.37	-	-	574	700	1,900	< 4	14,000 [3]	9,670	1,200	-	< 0.05	34.5 [3]	7.1	45	24.5 [3]	26.1 [3]	5,380	26,500	36.8	1,420 [3]	0.20	-
PNR-27	05/04/2011	16:10	34.36	10.11	0.88	6.64	-	-	599	731	1,850	< 4	13,200	9,810	1,260	-	< 0.05	40.2	6.9	44	33	32	5,420	27,700	32.7	1,850	0.20	-
PNR-27	09/21/2011	14:46	27.76	9.39	1.47	6.56	18,080	-	-	-	-	-	10,100 [3]	-	-	-	-	-	-	-	-	-	-	21,000	-	-	-	-
PNR-27 Dup	09/21/2011	14:46	-	-	-	-	-	-	-	-	-	-	9,780 [3]	-	-	-	-	-	-	-	-	-	-	19,900	-	-	-	-
PNR-27	05/16/2012	16:50	25.423	8.82	0.29	- [11]	16,530	-	-	-	-	-	8,710	-	-	-	-	-	-	-	-	-	-	15,000	-	-	-	-
PNR-27	10/11/2012	10:11	26.53	9.36	1.29	6.53	17,227	-	-	-	-	-	10,400 [3]	-	-	-	-	-	-	-	-	-	-	21,300	-	-	-	-
PNR-27	05/08/2013	16:06	24.69	9.40	0.61	6.42	15,900	162.1	-	-	-	-	8,210 [3]	-	-	-	-	-	-	-	-	-	-	17,600	-	-	-	-
PNR-27	09/26/2013	10:39	22.92	9.94	0.26	6.48	14,910	18.6	-	-	-	-	7,140 [3]	-	-	-	-	-	-	-	-	-	-	15,700	-	-	-	-
PNR-28	08/21/2001	16:45	31.4	10.30	-	-	-	-	501	612	1,910	< 1	11,700	10,800	1,460	-	< 0.1	23.1	7.2	39	21.1	-	3,090	25,200	26.2	1,480	-	-
PNR-28	09/05/2001	14:35	28.4	13.00	-	7.00	-	-	493	601	2,020	< 1	12,300	11,100	1,470	-	< 0.1	21.2	6.9	36	18.3	-	3,200	22,600	27	-	-	-
PNR-28	11/06/2001	14:40	29.7	12.20	-	7.10	-	-	519	633	1,880	< 1	10,500	10,400	1,380	-	< 0.1	20.2	6.7	34	-	37.3	3,070	24,700	24.4	1,660	-	-
PNR-28	02/20/2002	16:30	31.9	10.60	-	6.88	-	-	522	637	2,060	< 4	13,700	11,300	1,490	-	< 0.1	21.6	6.8	82	23	-	3,850	23,000	30.6	1,430	-	-
PNR-28	05/21/2002	17:15	38.8	12.40	-	6.67	-	-	450	549	1,990	< 4	14,700	10,900	1,430	-	< 0.1	23.3	6.8	43	33	-	3,910	27,400	33.9	1,820	0.17	-
PNR-28	08/20/2002	18:30	34.2	14.40	-	6.80	-	-	510	622	2,090	< 4	15,200	10,800	1,340	-	< 0.1	22.9	6.8	39	23	30	3,510	31,200	32.8	1,590	0.15	-
PNR-28	11/05/2002	13:20	36.4	10.20	-	6.53	-	-	516	630	2,340	< 4	15,700	12,600	1,640	-	< 0.1	22.7	6.8	46	20	36	4,850	29,700	28.9	1,740	0.17	-
PNR-28	03/05/2003	10:25	36.4	10.20	-	6.71	-	-	503	614	2,260	< 4	15,700	11,700	1,480	-	< 0.1	23.6	6.6	45	22	23	4,930	26,700	22.4	1,880	0.20	-
PNR-28	05/28/2003	10:30	32.8	13.10	-	6.53	-	-	519	633	2,130	< 1	15,100	11,300	1,450	-	< 0.1	22.4	6.7	63	22	38	4,900	30,200	40.8	1,460	0.21	-
PNR-28	08/13/2003	13:00	40.3	14.40	-	7.56	-	-	517	631	2,140	< 1	16,800	11,300	1,440	-	< 0.1	21.8	6.5	53	22	31	5,200	29,500	38.8	1,270	0.15	-
PNR-28	11/05/2003	14:30	4.62	9.20	-	7.30	-	-	484	591	2,180	< 4	17,300	11,700	1,520	-	< 0.1	22	6.9	58	23	28	6,010	29,100	23	1,350	0.16	-
PNR-28	06/08/2004	11:15	- [11]	11.40	-	6.90	-	-	528	644	2,090	< 4	17,400	11,000	1,400	-	< 0.1	21.7	6.7	51	20	36	5,720	32,900	44.5	1,740	0.21	-
PNR-28	09/15/2004	10:30	42.9	13.50	-	6.61	-	-	542	661	2,230	< 4	18,300 [3]	11,700	1,490 [3]	-	< 0.1	20.6	6.8	62 [3]	28 [3]	32 [3]	6,490 [3]	33,700	45.3	1,630 [3]	0.24	-
PNR-28	11/17/2004	9:30	49.7	10.10	-	6.92	-	-	529	646	2,310	< 4	17,800	11,800	1,470	-	< 0.1	21.3	6.8	68	25	24	6,480	32,500	45.8	1,660	0.18	-
PNR-28	03/01/2005	14:39	45.2	9.50	-	6.65	-	-	560	684	2,170	< 4	17,500	11,400	1,440	-	< 0.1	20	6.7	58	25	29	7,370	34,300	45.5	1,510	0.17	-
PNR-28	05/25/2005	11:07	48.2	9.90	-	6.49	-	-	472	575	2,150	< 4	17,800	11,100	1,400	-	< 0.1	21.5	6.7	59	22	21	7,440	34,200	45.7	1,770	0.21	-
PNR-28	08/16/2005	16:00	46.5	10.80	-	6.60	-	-	571	697	2,190	< 4	17,900	11,400	1,430	-	< 0.1	21.8	6.9	43	24	21	7,050	33,500	46.3	1,670	0.18	-
PNR-28	11/15/2005	11:35	51.2	10.10	-	6.63	-	-	497	606	2,240	< 4	19,200	11,600	1,470	-	< 0.1	20.2	6.9	42	23	24	7,700	32,500	47.5	1,600	0.16	-
PNR-28	02/08/2006	14:40	46.9	9.10	-	7.22	-	-	557	680	2,200	< 4	18,000	11,300	1,420	-	< 0.1	23	6.9	66	24	23	7,970	31,500	47	1,630	0.13	-
PNR-28	05/23/2006	13:55	43.7	9.80	-	6.69	-	-	539	658	2,080	< 4	18,800	10,800	1,350	-	< 0.1	23.1	7.4	60	24	25	7,970	32,500	47.7	1,630	0.16	-
PNR-28	08/23/2006	12:35	39.8	10.50	0.43	6.66	-	-	518	632	2,140	< 4	18,300	10,700	1,310	-	< 0.1	21.3	6.6	55	27	25	7,930	34,700	49.8	1,600	0.20	-
PNR-28	12/06/2006	16:30	47.40	8.83	-	6.93	-	-	526	642	1,990	< 4	18,400	10,100	1,250	-	< 0.1	28.3	6.8	44	23	23	7,690	33,600	49.5	1,680	0.20	-
PNR-28	03/13/2007	18:00	47.74	9.38	0.65	6.14	-	-	523	638	2,010	< 4	18,400	10,200	1,270	-	< 0.1	21.6	6.7	61	92	-	8,180	33,300	49.3	1,370	0.15	-
PNR-28	10/04/2007	16:30	48.92	9.92	0.49	6.53	-	-	529	645	1,910 [3]	< 4	19,500 [3]	9,550	1,160 [3]	-	< 0.1	23.2	6.5	43	21 [3]	30 [3]	7,950 [3]	33,200	51.9	1,720 [3]	0.10	-
PNR-28	03/26/2008	18:30	48.63	9.47	1.00	6.77	-	-	548	668	2,040 [3]	< 4	19,000 [3]	10,300	1,280 [3]	-	< 0.1	24.4	6.6	50	25 [3]	24 [3]	8,610 [3]	31,900	48.6	1,560 [3]	0.20	-
PNR-28 [14]	10/25/2008	13:40	51.6	9.49	0.67	6.56	-	-	546	666	1,860	< 4	18,600	9,390	1,150	-	< 0.1	26	6.8	46	20	27	7,980	34,100	48.9	1,750	0.20	-
PNR-28 [14]	04/19/2009	11:10	48.75	9.93	1.38	6.38	-	-	536	654	1,740	< 4	17,500 [3]	8,780	1,080	-	< 0.1	22.20	6.7	50	15.0 [3]	15.0 [3]	7,860 [3]	29,600	48.0	1,660 [3]	0.10	-
PNR-28 [14]	10/07/2009	10:15	48.69	9.40	0.97	6.34	-	-	538	656	1,840	< 4	18,600	9,210	1,120	-	< 0.05	24.6	6.9	51	27	24	8,040	34,000	46.1	1,320	< 0.1	-
PNR-28 [14]	04/16/2010	16:25	45.14	9.98	0.89	6.50	-	-	537	655	1,750 [3]	< 4	19,100 [3]	8,990	1,120 [3]	-	< 0.05	26.6 [3]	6.7	49 [3]	23 [3]	15 [3]	7,660 [3]	31,800	44.2	1,310	0.20	-
PNR-28 [14]	09/21/2010	12:15	37.68	9.76	-	6.44	-	-	510	622	2,040	< 4	14,800 [3]	10,600	1,340	-	< 0.05	29.9 [3]	7.1	49	22.2 [3]	23 [3]	5,490 [3]	27,200	36.5 [6]	1,290 [3]	0.20	-
PNR-28 [14]	05/05/2011	17:40	34.51	9.29	1.66	6.43	-	-	540	658	2,060	< 4	13,200	11,300	1,500	-	< 0.05	39.5	6.8	46	32	33	4,620	26,200	31.4	1,670	0.20	-
PNR-28 [14]	09/21/2011	13:53	31.38	9.16	5.00	6.43	20,400	-	-	-	-	-	11,700 [3]	-	-	-	-	-	-	-	-	-	-	25,900	-	-	-	-
PNR-28 [14]	05/17/2012	9:32	26.60	8.08	5.15	- [11]	-	-	-	-	-	-	9,240	-	-	-	-	-	-	-	-	-	-	17,200	-	-	-	-
PNR-28 Dup [14]	05/17/2012	9:32	-	-	-	-	-	-	-	-	-	-	9,160 [3]	-	-	-	-	-	-	-	-	-	-	16,800	-	-	-	-
PNR-28 [14]	10/11/2012	12:39	24.83	9.34	3.54	6.50	16,140	-	-	-	-	-	9,580 [3]	-	-	-	-	-	-	-	-	-	-	18,500	-	-	-	-
PNR-28 [14]	05/10/2013	13:28	24.83	9.44	4.51	6.28	16,140	204.4	-	-	-	-	8,270 [3]	-	-	-	-	-	-	-	-	-	-	17,200	-	-	-	-
PNR-28 [14]	09/28/2013	11:34	25.39	9.84	3.55	6.68	16,510	16.8	-	-	-	-	8,780 [3]	-	-	-	-	-	-	-	-	-	-	17,900	-	-	-	-
PNR-29	08/21/2001	17:45	5.1	10.10	-	-	-	-	606	740	390	< 1	129	2,170	290	-	< 0.1	174	7.2	14	25	-	480	4,760	5	1,940	-	-
PNR-29	09/05/2001	14:00	4.9	12.80	-	7.40	-	-	695	847	393	< 1	104	2,180	291	-	< 0.1	162	6.5	11	22.4	-	483	4,760	4.82	-	-	-
PNR-29	11/06/2001	12:50	4.9	11.70	-	7.50	-	-	691	843	400	< 1	99	2,180	286	-	< 0.1	158	7.1	11	-	30.1	469	4,650	4.98	1,880	-	-
PNR-29	02/20/2002	13:03	4.8	10.10	-	7.01	-	-	623	760	399	< 4	106	2,200	292	-	< 0.1	160	6.9	13	28	-	501	4,640	5.4	2,070	-	-
PNR-29	05/21/2002	16:30	5.38	11.90	-	7.00	-	-	662	807	359	< 4	83	1,980	262	-	< 0.1	169	7.3	11	31	-	449	4,640	5.27	2,080	0.24	-
PNR-29	08/20/2002	11:20	4.3	13.30	-	7.00	-	-	669	816	376	< 4	113	2,130	290	-	< 0.1	163	7.2	10	25	35	431	4,780	5.4	2,030	0.27	-
PNR-29	11/05/2002	12:42	4.9	9.90	-	6.93	-	-	680	830	403	< 4	117	2,200	290	-	< 0.1	167	7.1	12	25	31	469	4,770	5.45	2,070	0.28	-
PNR-29	03/05/2003	10:30	4.8	9.20	-	6.66	-	-	661	807	410	< 4	181	2,230	292	-	< 0.1	175	7.2	13	6	22	550	4,730	5.52	2,060	0.20	-
PNR-29	05/28/2003	10:00	4.4	12.10	-	6.87	-	-	677	826	418	< 1	116	2,230	292	-	< 0.1	172	7.1	13	25	35	489	4,790	5.55	2,030	0.32	-
PNR-29	08/13/2003	13:08	4	11.50	-	7.48	-	-	674	822	404	< 1	88	2,200	288	-	< 0.1	181	7.0	11	25	61	460	4,800	5.33	1,920	0.25	-
PNR-29	11/04/2003	16:45	4.6	9.80	-	7.11	-	-	684	835	362	< 4	104	2,160	305	-	< 0.1	178	7.1	13	26.9	29.8	482	4,760	4.68	2,120	0.27	-
PNR-29	06/08/2004	10:45	- [11]	11.20	-	7.26	-	-	702	856	403	< 4	119	2,260	304	-	< 0.1	176	7.1	12	25.3	35.1	492	4,770	4.91	2,030	0.31	-
PNR-29	09/15/2004	9:40	5.01	12.70	-	7.00	-	-	717	875	441	< 4	99 [3]	2,350	303	-	< 0.1	174	7.2	12	26.8	26.2 [3]	468 [3]	4,780	5.33	2,040 [3]	0.28	-
PNR-29	11/17/2004	9:31	5.4	9.60	-	7.15	-	-	693	846	416	< 4	111	2,270	299	-	< 0.1	171	6.9	13	27.3	29	505	4,660	5.34	2,010	0.29	-
PNR-29	03/01/2005	13:36	5	9.40	-	7.08	-	-	727	887	428	< 4	112	2,340	309	-	< 0.1	170	7.1	14	28.5	26.8	549	4,800	5.26	2,030	0.30	-
PNR-29	05/25/2005	9:46	5.2	9.80	-	6.90	-	-	611	745	419	< 4	98	2,290	301	-	< 0.1	180	7.2	14	27	28.9	524	4,720	5.26	1,860	0.30	-
PNR-29	08/16/2005	14:48	5.07	10.60	-	6.98	-	-	657	802	437	< 4	102	2,400	317	-	< 0.1	177	7.3	11	25.7	23.3	498	4,790	5.3	1,930	0.28	-
PNR-29	11/15/2005	10:50	5.5	9.70	-	7.01	-	-	656	800	461	< 4	107	2,520	332	-	< 0.1	180	7.1	10	27.5	26.3	536	4,810	5.4	2,020	0.26	-
PNR-29	02/08/2006	16:15	5.1	8.70	-	7.43	-	-	720	878	468	< 4	108	2,530	332	-	< 0.1	180	7.2	13	29.5	29.7	564	4,700	5.4	1,980	0.23	-
PNR-29	05/23/2006	14:35	4.8	10.20	-	7.02	-	-	695	848	421	< 4	106	2,350	316	-	< 0.1	256	7.9	13	28.2	31.8	555	4,520	5.37	2,050	0.27	-
PNR-29	08/23/2006	11:37	4.12	9.90	0.36	7.00	-	-	663	808	445	< 4	103	2,410	315	-	< 0.1	259	7.0	14	29.2	26.9	545	4,820	5.6	1,970	0.30	-
PNR-29	12/06/2006	16:00	5.284	8.68	-	7.22	-	-	672	820	426	< 4	96	2,350	313	-	< 0.1	223	7.2	15	29	27.9	544	4,830	5.7	2,010	0.30	-
PNR-29	03/13/2007	17:50	5.5	9.10	-	6.83	-	-	664	811	446	< 4	106	2,410	315	-	< 0.1	235	7.1	13	38	-	538	4,740	5.54	1,880	0.25	-
PNR-29	10/02/2007	18:40	6.379	9.54	-	7.06	-	-	668	815	420 [3]	< 4	96	2,280	299	-	< 0.1	243 [3]	7.1	11	27.7 [3]	30.5 [3]	487 [3]	4,680	5.81	1,960	0.3	-
PNR-29	03/26/2008	12:10	5.331	9.59	0.82	7.19	-	-	689	840	426 [3]	< 4	92	2,320	306	-	< 0.1	260 [3]	7.1	10	26.7 [3]	27.7 [3]	489 [3]	4,660	5.46	1,990	0.30	-
PNR-29	10/25/2008	12:55	5.755	9.29	0.77	7.02	-	-	684	835	446	< 4	105	2,430	319	-	< 0.1	202	7.1	12	28.1	37.1	543	4,960	5.5	2,150	0.30	-
PNR-29	04/21/2009	11:30	5.488	10.01	0.68	6.75	-	-	669	816	445	< 4	81	2,390	310	-	< 0.1	202.00 [3]	7.1	13	28.1 [3]	29.0 [3]	499 [3]	4,250	5.4	2,140	0.30	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-29	10/03/2009	15:15	5.483	9.60	0.99	6.77	-	-	673	821	445	< 4	86	2,390	311	-	< 0.05	183	7.1	12	28.9	35	494	4,500	5.28	1,940	0.30	-
PNR-29	04/14/2010	11:55	5.178	8.91	1.12	6.76	-	-	667	814	461	< 4	90	2,460	318	-	< 0.05	228	7.1	12	28.1	34	520	4,900	5.44	2,120	0.30	-
PNR-29	09/18/2010	11:45	5.560	9.69	1.21	6.79	-	-	682	832	435	< 4	97	2,340	305	-	< 0.05	183	7.2	12	27.4	27.7	504	4,880	5.46	1,980	0.30	-
PNR-29	05/04/2011	13:50	5.392	9.41	0.43	6.39	-	-	705	860	439	< 4	90	2,340	302	-	< 0.05	186	7.2	13	29	30.3	504	4,910	5.6	2,210	0.20	-
PNR-29	09/20/2011	10:31	5.895	8.46	0.50	6.49	3,831	-	-	-	-	-	76	-	-	-	-	-	-	-	-	-	-	4,650	-	-	-	-
PNR-29	10/12/2012	13:11	5.529	8.21	1.10	6.36	3,594	204.2	-	-	-	-	93	-	-	-	-	-	-	-	-	-	-	4,840	-	-	-	-
PNR-29	15 05/08/2013	11:08	5.620	9.61	0.35	6.96	3,650	-221.1	-	-	-	-	95	-	-	-	-	-	-	-	-	-	-	5,150	-	-	-	-
PNR-33-06	10/24/2006	16:25	-	-	-	-	-	-	607	741	474	< 4	101	3,020	447	-	0.5	38.8	7.0	20	28.9	38.4	286	4,890	5.3	2,700	0.22	-
PNR-33-06	12/06/2006	11:00	4.6	9.40	-	7.03	-	-	464	566	467	< 4	85	2,740	381	-	0.1	53.4	7.0	16	25.3	26.4	264	4,450	4.9	2,490	0.20	-
PNR-33-06	03/13/2007	13:45	4.70	10.00	-	6.89	-	-	411	502	467	< 4	73	2,490	321	-	0.2	45.4	7.2	15	33.7	-	269	4,170	4.57	2,390	0.24	-
PNR-33-06	10/03/2007	15:35	5.63	11.40	-	7.22	-	-	396	483	483	< 4	104	2,600	340	-	0.1	43.6	7.1	16	24.8	27.3	276	4,480	5.02	2,510	0.3	-
PNR-33-06	03/26/2008	17:15	4.60	11.80	-	7.15	-	-	395	482	464	< 4	107	2,540	336	-	0.1	53.8	7.2	16	25.5	30.1	270	4,550	4.88	2,550	0.30	-
PNR-33-06	10/23/2008	11:05	4.811	10.13	0.24	7.06	-	-	390	475	513	< 4	125	2,840	379	-	< 0.1	57	7.3	16	25.7	27.6	295	4,500	4.92	2,650	0.30	-
PNR-33-06	04/17/2009	17:30	5.027	10.04	0.24	6.81	-	-	389	475	488	< 4	134	2,690	356	-	< 0.1	47.40	7.2	17	25.5	27.0	273	4,230	4.9	2,670	0.30	-
PNR-33-06	10/04/2009	13:05	5.165	9.87	0.42	6.81	-	-	382	466	541	< 4	118	2,920	380	-	< 0.05	44	7.3	17	25.4	27	300	4,540	4.89	2,600	0.30	-
PNR-33-06	04/14/2010	15:00	4.811	10.06	0.68	6.97	-	-	373	455	494	< 4	108	2,740	366	-	< 0.05	60	7.2	18	25.5	27	305	4,790	4.99	2,730	0.30	-
PNR-33-06	09/21/2010	12:18	4.939	9.65	0.90	6.88	-	-	372	453	523	< 4	101	2,830	370	-	< 0.05	43.2	7.6	17	26.3	26.8	299	4,890	4.93	2,660	0.30	-
PNR-33-06	05/04/2011	11:45	4.816	9.63	1.45	6.91	-	-	385	470	508	< 4	109	2,810	375	-	0.1	52.7	7.3	17	26	27.8	296	4,840	4.73	2,980	0.30	-
PNR-33-06	09/20/2011	11:59	5.444	8.83	1.93	6.69	3,538	-	-	-	-	-	93	-	-	-	-	-	-	-	-	-	-	4,720	-	-	-	-
PNR-33-06	10/12/2012	15:02	5.019	8.23	2.18	6.41	3,262	150.6	-	-	-	-	102	-	-	-	-	-	-	-	-	-	-	4,620	-	-	-	-
PNR-33-06	15 05/08/2013	12:52	5.113	7.12	1.95	7.12	3,324	-96.9	-	-	-	-	94	-	-	-	-	-	-	-	-	-	-	4,990	-	-	-	-
PNR-34-07	03/14/2007	13:15	34.47	9.92	0.27	6.51	-	-	469	573	2,330	< 4	15,600	13,200	1,800	-	0.6	6.3	6.8	50	330	-	4,480	29,400	40.3	1,630	0.14	-
PNR-34-07	10/05/2007	15:40	39.30	9.71	0.14	6.56	-	-	477	582	2,220	< 4	15,700	12,700	1,730	-	0.4	2.84	6.8	45	16	28	4,390	28,700	40.1	1,700	0.10	-
PNR-34-07	14 03/27/2008	18:00	41.40	9.76	0.48	6.64	-	-	515	629	2,150	< 4	15,900	11,900	1,590	-	0.2	9.39	6.7	38	17	17	5,270	26,900	41.3	1,430	0.10	-
PNR-34-07	14 10/25/2008	11:15	45.48	9.94	0.25	6.60	-	-	498	608	2,310	< 4	17,000	12,800	1,720	-	0.2	6.33	6.8	43	12	41	5,850	29,800	44.4	1,740	0.10	-
PNR-34-07	14 04/22/2009	16:15	41.53	10.75	0.35	6.56	-	-	492	600	1,740	< 4	14,300	9,390	1,220	-	0.5	9.46	6.7	50	10.0	24.0	5,560	26,300	39.4	1,470	< 0.1	-
PNR-34-07	14 10/06/2009	15:55	44.1	10.24	0.25	6.54	-	-	237	289	2,100	< 4	17,200	11,300	1,480	-	0.3	5.17	6.9	46	17	35	6,020	31,900	41.7	1,140	< 0.1	-
PNR-34-07	14 04/16/2010	12:20	44.58	10.29	0.37	6.50	-	-	503	614	1,930	< 4	21,300	10,400	1,340	-	0.2	11.7	6.8	46	15	31	6,780	31,500	44.0	1,460	0.10	-
PNR-34-07	14 09/21/2010	16:20	43.99	9.76	0.54	6.56	-	-	511	623	1,990	< 4	18,200	10,400	1,330	-	0.1	8.53	7.1	49	12.7	22.5	7,050	33,700	43.2	1,220	0.10	-
PNR-34-07	14 05/04/2011	15:10	40.96	10.99	0.42	6.64	-	-	545	665	1,560	< 4	16,600	8,140	1,030	-	0.1	12	6.9	39	13	34	6,080	30,400	35.7	1,510	0.10	-
PNR-34-07	14 09/22/2011	14:46	32.82	9.83	0.91	6.63	21,390	-	-	-	-	-	13,100	-	-	-	-	-	-	-	-	-	-	22,800	-	-	-	-
PNR-34-07	14 05/17/2012	16:46	37.40	10.33	0.54	6.51	24,300	-	-	-	-	-	15,200	-	-	-	-	-	-	-	-	-	-	24,900	-	-	-	-
PNR-34-07	14 10/12/2012	11:16	39.81	9.98	0.33	6.49	25,503	-	-	-	-	-	15,800	-	-	-	-	-	-	-	-	-	-	26,200	-	-	-	-
PNR-34-07 Dup	14 10/12/2012	11:16	-	-	-	-	-	-	-	-	-	-	14,800	-	-	-	-	-	-	-	-	-	-	26,400	-	-	-	-
PNR-34-07	14 05/10/2013	14:41	30.77	10.42	0.21	6.46	20,000	179.9	-	-	-	-	12,600	-	-	-	-	-	-	-	-	-	-	24,300	-	-	-	-
PNR-34-07	14 09/24/2013	14:42	29.70	10.57	0.31	6.57	19,240	-78.7	-	-	-	-	10,600	-	-	-	-	-	-	-	-	-	-	24,200	-	-	-	-
PNR-35-07	03/13/2007	11:15	3.817	9.87	0.52	6.54	-	-	679	828	240	< 4	84	1,300	171	-	0.9	< 0.05	7.2	8	31.3	-	518	3,220	4	1,560	0.39	-
PNR-35-07	10/02/2007	16:05	4.641	10.17	0.01	6.96	-	-	670	818	234	< 4	89	1,290	172	-	0.4	< 0.05	7.2	8	21.5	34.2	509	3,150	4.22	1,580	0.40	-
PNR-35-07	03/26/2008	10:40	3.844	10.07	0.38	7.17	-	-	686	837	236	< 4	87	1,310	176	-	0.4	< 0.05	7.2	8	21.7	46.7	513	3,120	3.95	1,580	0.40	-
PNR-35-07	10/22/2008	17:10	3.912	9.89	0.37	7.06	-	-	661	806	240	< 4	101	1,340	181	-	0.4	< 0.05	7.3	8	20.8	69.8	527	3,230	4.01	1,620	0.40	-
PNR-35-07	04/20/2009	18:30	4.011	9.91	0.32	6.82	-	-	667	814	246	< 4	79	1,350	179	-	0.5	< 0.05	7.3	10	22.1	164.0	490	2,830	4.0	1,570	0.40	-
PNR-35-07	10/03/2009	16:45	4.001	10.06	0.46	6.84	-	-	659	804	228	< 4	89	1,280	173	-	0.4	0.18	7.3	9	22	163	482	2,750	3.9	1,400	0.40	-
PNR-35-07	04/14/2010	14:15	3.719	9.76	0.63	6.82	-	-	650	793	235	< 4	106	1,320	178	-	0.4	< 0.01	7.1	11	22.6	84	536	3,250	4.05	1,620	0.38	-
PNR-35-07	09/18/2010	14:30	4.057	9.93	0.75	6.90	-	-	650	792	254	< 4	114	1,390	184	-	0.4	0.04	7.3	10	22.8	107	509	3,210	4	1,480	0.40	-
PNR-35-07	05/04/2011	15:45	3.942	9.84	0.22	6.68	-	-	690	841	232	< 4	118	1,300	174	-	0.4	0.04	7.3	9	23.1	68	504	3,390	4.1	1,660	0.30	-
PNR-35-07	09/21/2011	13:57	4.497	9.33	0.28	6.53	2,923	-	-	-	-	-	149	-	-	-	-	-	-	-	-	-	-	3,350	-	-	-	-
PNR-35-07	10/13/2012	10:45	3.959	8.49	0.69	6.47	2,605	-10.1	-	-	-	-	172	-	-	-	-	-	-	-	-	-	-	3,340	-	-	-	-
PNR-35-07 Dup	10/13/2012	10:45	-	-	-	-	-	-	-	-	-	-	193	-	-	-	-	-	-	-	-	-	-	3,370	-	-	-	-
PNR-35-07	09/25/2013	12:42	4.232	10.30	0.15	6.91	2,751	-126.6	-	-	-	-	240	-	-	-	-	-	-	-	-	-	-	3,470	-	-	-	-
PNR-36-07	03/13/2007	11:40	3.202	9.51	0.41	7.07	-	-	417	509	284	< 4	209	1,470	185	-	< 0.1	77.7	7.1	12	25.2	-	272	2,690	3.51	1,010	< 0.1	-
PNR-36-07	10/03/2007	14:30	3.213	9.70	0.12	6.96	-	-	425	518	271	< 4	139	1,400	176	-	< 0.1	68.4	7.1	9	17.8	29.9	242	2,700	3.6	1,200	0.30	-
PNR-36-07	03/26/2008	16:50	3.113	9.42	0.16	6.87	-	-	412	503	268	< 4	138	1,350	166	-	< 0.1	56.4	7.2	10	17.2	19.6	208	2,450	3.09	1,050	0.30	-
PNR-36-07	10/23/2008	15:25	3.498	9.66	0.67	7.04	-	-	420	512	302	< 4	265	1,560	196	-	< 0.1	78.7	7.1	11	17.8	21.8	289	2,810	3.73	1,170	0.30	-
PNR-36-07	04/21/2009	14:35	3.820	9.69	0.15	6.97	-	-	410	500	301	< 4	246	1,560	197	-	< 0.1	68.80	7.0	13	16.4	23.0	274	2,480	3.7	1,130	0.30	-
PNR-36-07	10/02/2009	16:40	3.46	9.47	0.26	6.90	-	-	425	518	311	< 4	193	1,610	203	-	< 0.05	61	7.2	12	18.6	23	276	2,730	3.53	1,240	0.30	-
PNR-36-07	04/14/2010	12:20	3.179	9.31	0.31	6.90	-	-	401	489	278	< 4	191	1,440	182	-	< 0.05	61	7.1	12	18.1	19	233	2,610	3.36	1,130	0.30	-
PNR-36-07	09/17/2010	10:30	3.718	9.40	1.05	6.85	-	-	430	525	322	< 4	119	1,680	214	-	< 0.05	60.2	7.2	12	19.2	20.8	268	3,180	3.63	1,360	0.20	-
PNR-36-07	05/04/2011	10:45	3.493	9.39	0.23	6.65	-	-	455	555	329	< 4	123	1,760	227	-	< 0.05	42	7.2	11	21.3	22.3	252	3,230	3.76	1,660	0.20	-
PNR-36-07	09/20/2011	15:38	3.737	8.62	0.20	6.40	2,431	-	-	-	-	-	55	-	-	-	-	-	-	-	-	-	-	2,950	-	-	-	-
PNR-36-07	10/11/2012	14:10	2.94	7.78	0.68	6.75	1,912	129.3	-	-	-	-	51	-	-	-	-	-	-	-	-	-	-	2,510	-	-	-	-
PNR-36-07	05/07/2013	14:22	2.974	10.53	0.08	6.84	1,930	-28.1	-	-	-	-	58	-	-	-	-	-	-	-	-	-	-	2,420	-	-	-	-
PNR-38-08	03/26/2008	18:30	6.16	11.50	-	7.29	-	-	508	620	348	< 4	854	1,690	200	-	< 0.1	0.07	7.2	12	28.7	42.3	584	3,630	5.22	1,130	0.20	-
PNR-38-08	10/23/2008	13:10	5.991	9.69	0.18	7.20	-	-	477	581	406	< 4	1,160	2,030	247	-	1.8	< 0.05	7.2	12	23.6	32	618	4,050	5.97	1,210	0.20	-
PNR-38-08	04/21/2009	16:30	6.446	9.74	0.14	7.02	-	-	458	558	404	< 4	1,230	2,020	246	-	1.9	< 0.05	7.2	13	22.4	26.0	597	3,710	6.3	1,160	0.20	-
PNR-38-08	10/03/2009	17:10	6.653	9.65	0.19	6.83	-	-	457	558	425	< 4	1,460	2,120	257	-	1.8	< 0.01	7.1	12	22.1	28	623	4,320	6.34	1,080	0.20	-
PNR-38-08	04/14/2010	17:05	6.485	9.79	0.24	7.02	-	-	453	552	439	< 4	1,620	2,200	268	-	1.7	< 0.01	7.1	13	24.8	49	689	4,700	6.62	1,200	0.20	-
PNR-38-08	09/20/2010	13:35	8.886	9.57	0.42	6.91	-	-	442	539	451	< 4	1,580	2,250	273	-	1.9	0.03	7.1	12	22.3	27.2	669	4,740	6.74	1,070	0.20	-
PNR-38-08	05/04/2011	13:30	6.990	9.68	0.32	7.05	-	-	453	553	451	< 4	1,760	2,310	287	-	1.6	0.01	7.0	13	23.1	27	670	5,340	6.66	1,240	0.20	-
PNR-38-08	09/22/2011	9:52	7.959	8.98	0.21	6.71	5,174	-	-	-	-	-	1,660	-	-	-	-	-	-	-	-	-	-	5,150	-	-	-	-
PNR-38-08 Dup	09/22/2011	9:52	-	-	-	-	-	-	-	-	-	-	1,680	-	-	-	-	-	-	-	-	-	-	4,980	-	-	-	-
PNR-38-08	05/18/2012	11:34	19.40	8.63	0.85	- 11	-	-	-	-	-	-	1,900	-	-	-	-	-	-	-	-	-	-	4,890	-	-	-	-
PNR-38-08	10/11/2012	11:34	10.06	10.03	0.17	6.99	6,536	-	-	-	-	-	1,980	-	-	-	-	-	-	-	-	-	-	5,440	-	-	-	-
PNR-38-08	05/10/2013	13:28	8.292	9.70	0.59	6.91	5,390	-216.4	-	-	-	-	2,070	-	-	-	-	-	-	-	-	-	-	5,550	-	-	-	-
PNR-38-08	09/27/2013	14:41	8.298	10.32	0.13	7.00	5,393	-180.2	-	-	-	-	2,070	-	-	-	-	-	-	-	-	-	-	5,390	-	-	-	-
PNR-39-08	06/28/2008	14:20	29.5	9.50	-	6.70	-	-	450	550	2,080	< 4	10,900	11,900	1,630	-	< 0.1	21.5	6.5	39	22	15	2,840	20,500	28.5	1,830	0.20	-
PNR-39-08	10/23/2008	18:00	30.81	9.71	0.73	6.66	-	-	458	559	2,120	< 4	11,300	12,100	1,670	-	< 0.1	32.2	6.8	34	18	22	3,020	21,100	31.1	1,720	0.20	-
PNR-39-08	04/22/2009	14:40	32.29	10.11	0.30	6.42	-	-	448	547	1,890	< 4	11,200	10,800	1,470	-	< 0.1	26.60	6.6	38	6.0	13.0	2,800	23,000	31.2	1,670	0.20	-
PNR-39-08	10/04/2009	14:15	32.75	9.74	0.45	6.48	-	-	453	553	1,990	< 4	11,600	11,100	1,490	-	< 0.05	26.6	6.8	36	25	21	2,940	22,800	30.9	1,260	0.20	-
PNR-39-08	04/16/2010	11:05	31.87	10.10	1.84	6.22	-	-	372	454	1,910	< 4	13,000	10,800	1,460	-	< 0.05	30.4	6.8	39	18	17	3,150	21,300	31.4	1,430	0.20	-
PNR-39-08	09/21/2010	15:45	30.33	9.47	0.94	6.53	-	-	464	566	1,940	< 4	11,500	10,700	1,420	-	< 0.05	27.4	7.2	38	18.7	17.4	2,920	26,200	28.9	1,270	0.20	-
PNR-39-08	05/04/2011	14:30	26.80	10.17	0.79	6.60	-	-	505	616	1,980	< 4	10,500	11,200	1,520	-	< 0.05	30.8	6.9	38	28	22	3,180	21,200	24.7	1,710	0.20	-
PNR-39-08	09/21/2011	12:05	26.93	9.45	3.22	6.47	17,500	-	-	-	-	-	9,710	-	-	-	-	-	-	-	-	-	-	22,500	-	-	-	-
PNR-39-08	05/16/2012	12:39	24.04	10.00	0.82	6.55	15,630	-	-	-	-	-	9,380	-	-	-	-	-	-	-	-	-	-	17,100	-	-	-	-
PNR-39-08	10/11/2012	10:42	23.66	9.85	2.10	6.51	15,377	-	-	-	-	-	9,530	-	-	-	-	-	-	-	-	-	-	18,500	-	-	-	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Fluoride mg/L	Iron mg/L
PNR-39-08	05/10/2013	12:42	19.36	9.87	0.54	6.40	12,590	181.7	-	-	-	-	6,330	-	-	-	-	-	-	-	-	-	-	12,500	-	-	-	-
PNR-39-08	09/28/2013	14:48	18.04	9.96	0.8	6.69	11,730	-138.7	-	-	-	-	5,890	-	-	-	-	-	-	-	-	-	-	12,400	-	-	-	-
PNR-40-12	05/17/2012	11:43	7.973	9.45	3.91	6.81	5,182	-	-	-	-	-	224	-	-	-	-	-	-	-	-	-	-	7,240	-	-	-	-
PNR-40-12 [14]	10/13/2012	11:02	7.553	8.72	2.34	6.78	4,910	-	-	-	-	-	191	-	-	-	-	-	-	-	-	-	-	7,280	-	-	-	-
PNR-40-12 [14]	05/09/2013	13:36	7.972	9.38	1.50	8.57	5,182	-113.4	-	-	-	-	192	-	-	-	-	-	-	-	-	-	-	7,660	-	-	-	-
PNR-40-12 [14]	07/03/2013	13:47	7.627	9.26	2.36	6.74	4,957	-152.4	351	428	490	< 4	199	3,090	454	0.01	< 0.05	390	7.3	23	19.0	21.4	759	7,270	7.79	3,400	0.3	< 0.03
PNR-40-12 [14]	09/26/2013	16:41	7.576	9.03	2.12	6.87	4,924	-44.6	-	-	-	-	188	-	-	-	-	-	-	-	-	-	-	7,080	-	-	-	-
PNR-41-12	05/20/2012	12:00	5.160	8.27	6.18	6.14	3,355	-	-	-	-	-	910	-	-	-	-	-	-	-	-	-	-	3,230	-	-	-	-
PNR-41-12	10/13/2012	12:40	3.109	8.69	0.62	6.89	1,967	-	-	-	-	-	220	-	-	-	-	-	-	-	-	-	-	2,330	-	-	-	-
PNR-41-12	05/09/2013	17:18	3.178	9.32	0.49	8.41	2,068	-104.3	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-	2,220	-	-	-	-
PNR-41-12	07/03/2013	9:47	2.551	9.03	0.28	6.58	1,644	67.3	625	762	134	< 4	111	664	80	0.36	0.55	0.55	7.4	7	14.0	15.3	354	1,830	2.62	687	0.4	0.60
PNR-41-12 Dup	07/03/2013	9:47	-	-	-	-	-	-	622	759	131	< 4	112	653	79	0.35	0.56	0.55	7.6	7	13.6	16.1	343	1,820	2.60	691	0.4	0.65
PNR-41-12	09/25/2013	12:41	2.829	8.99	0.35	6.91	1,838	-171.0	-	-	-	-	108	-	-	-	-	-	-	-	-	-	-	1,990	-	-	-	-
USGS06-1	01/10/2008	12:53	3.092	9.68	-	6.99	-	-	394	481	257	< 4	200	1,390	182	-	NA	NA	7.3	9	21.4	NA	166	2,340	3.04	1,040	0.20	-
USGS06-1	04/17/2009	17:15	3.109	10.10	0.49	7.16	-	-	390	476	240	< 4	229	1,310	172	-	< 0.1	11.3	7.4	9	21.6	50	165	2,270	2.92	973	0.30	-
USGS06-2	04/18/2009	13:50	5.904	10.22	-	7.27	-	-	315	384	390	< 4	791	2,400	346	-	< 0.1	22.2	7.6	8	19.1	116	523	4,250	5.95	1,910	0.50	-
USGS06-7	10/04/2007	17:50	1.142	9.62	0.44	8.18	-	-	441	530	20	4	13	90	10	-	0.6	2.65	8.0	3	15.8	17.1	240	748	1.27	172	0.40	-
USGS06-7	09/18/2011	18:09	1.317	9.14	0.12	7.32	856	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	748	-	-	-	-
USGS06-8	04/19/2009	13:05	1.214	9.76	0.08	7.67	-	-	440	519	21	9	15	99	11	-	0.6	< 0.05	7.9	4	16.3	16.9	236	734	1.2	168	0.50	-
USGS06-11	04/20/2009	17:35	1.242	8.18	0.11	7.11	-	-	472	575	32	< 4	14	155	18	-	0.4	< 0.05	7.8	4	17.6	17.9	222	751	1.24	166	0.40	-
USGS06-11	09/18/2011	16:04	1.351	7.44	0.23	7.14	878	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-	745	-	-	-	-
USGS09-2	09/18/2011	17:19	3.39	8.47	0.90	7.59	-	-	-	-	-	-	826	-	-	-	-	-	-	-	-	-	-	1,840	-	-	-	-
USGS09-3	09/19/2011	13:50	2.633	9.09	0.11	7.15	1,710	-	-	-	-	-	393	-	-	-	-	-	-	-	-	-	-	1,390	-	-	-	-
USGS09-6	09/19/2011	10:16	15.534	8.18	-	6.91	14,880	-	-	-	-	-	7,990	-	-	-	-	-	-	-	-	-	-	14,100	-	-	-	-
USGS92-6	04/16/2009	16:13	9.99	8.25	0.3	7.03	-	-	363	443	367	< 4	2,990	1,650	178	-	0.8	< 0.05	7.3	12	17.3	20	1,420	4,820	10.1	486	0.20	-
USGS92-7	04/15/2009	15:40	10.84	8.56	0.31	7.42	-	-	407	496	216	< 4	3,290	899	88	-	2.4	< 0.05	7.4	20	13.9	12.9	1,930	5,580	10.8	371	0.30	-
USGS92-9	04/15/2009	17:02	11.47	8.50	0.65	7.15	-	-	324	395	489	< 4	3,480	2,050	203	-	0.6	< 0.05	7.1	12	12.8	15	1,610	6,500	11.4	683	0.20	-
USGS92-12	06/01/2000	15:50	2.7	10.80	-	6.50		48.0	389	474	240	< 1	11	1,670	260	-	-	3.94	7.9	14	-	-	95	2,330	2.58	1,410	-	12.1
USGS92-12	08/07/2001	11:35	2.2	9.80	-	6.70	-	-	422	515	203	< 1	7	1,420	222	-	< 0.1	4.37	7.2	12	25.1	-	92	2,520	2.61	1,360	-	-
USGS92-12	08/15/2001	14:40	- [11]	9.30	-	7.70	-	-	422	515	220	< 1	8	1,520	235	-	< 0.1	4.28	7.4	13	28.3	-	94	2,310	2.43	1,450	-	-
USGS92-12	11/06/2001	14:30	1.7	10.00	-	7.10	-	-	420	512	197	< 1	6	1,370	212	-	< 0.1	5.01	7.4	13	-	32.1	83	2,150	2.33	1,200	-	-
USGS92-12	02/20/2002	14:25	2.3	10.00	-	7.38	-	-	458	558	171	< 4	6	1,270	205	-	< 0.1	5.07	7.3	11	29.1	-	84	2,140	2.49	1,220	-	-
USGS92-12	05/21/2002	14:05	2.6	12.70	-	7.57	-	-	403	491	174	< 4	< 10	1,220	191	-	< 0.1	4.98	7.6	11	26.8	-	85	2,040	2.32	1,250	0.43	-
USGS92-12	08/19/2002	16:00	2.35	9.70	-	7.20	-	-	413	504	197	< 4	6	1,520	249	-	< 0.1	5.53	7.4	12	24.4	22.2	90	2,420	2.74	1,400	0.41	-
USGS92-12	11/05/2002	12:00	2.6	9.80	-	7.31	-	-	422	514	226	< 4	6	1,540	237	-	< 0.1	6.05	7.4	14	25.8	30.3	97	2,560	2.9	1,480	0.43	-
USGS92-12	03/04/2003	11:30	2.3	8.40	-	7.22	-	-	404	493	190	< 4	10	1,360	216	-	< 0.1	6.28	7.5	13	26	27	97	2,190	2.44	1,190	0.40	-
USGS92-12	05/13/2003	14:15	2	8.80	-	8.04	-	-	415	507	187	< 4	7	1,330	211	-	< 0.1	6.22	7.4	13	24.3	24.9	89	2,030	2.3	1,170	0.44	-
USGS92-12	08/13/2003	7:48	2	10.10	-	8.10	-	-	415	507	203	< 1	4	1,440	226	-	< 0.1	5.48	7.4	13	25.8	29.8	101	2,450	2.64	1,370	0.40	-
USGS92-12	11/05/2003	10:00	3.1	9.20	-	7.97	-	-	410	500	152	< 4	4	1,140	184	-	< 0.1	6.83	7.6	15	26.7	32	79	1,820	1.98	924	0.41	-
USGS92-12	06/08/2004	9:15	2.3	9.70	-	7.60	-	-	402	490	203	< 4	4	1,450	230	-	< 0.1	5.32	7.4	13	23.4	37.6	117	2,500	2.83	1,390	0.46	-
USGS92-12	09/14/2004	11:08	3	11.50	-	7.76	-	-	418	510	280	< 4	6	1,990	314	-	< 0.1	7.11	7.5	19	28.6	30.7	133	3,160	3.34	1,840	0.44	-
USGS92-12	11/16/2004	9:20	3.1	10.30	-	7.18	-	-	407	496	256	< 4	6	1,800	282	-	< 0.1	8.27	7.4	19	29.1	29	129	2,760	3.07	1,670	0.45	-
USGS92-12	03/01/2005	12:40	2.5	9.30	-	7.37	-	-	425	518	191	< 4	4	1,410	226	-	< 0.1	8.57	7.4	15	26.8	26.9	117	2,260	2.53	1,250	0.44	-
USGS92-12	05/24/2005	10:43	2.3	9.00	-	7.39	-	-	356	434	177	< 4	4	1,280	203	-	< 0.1	9.06	7.5	15	24.4	22.9	110	2,260	2.62	1,120	0.43	-
USGS92-12	08/17/2005	9:10	2.9	11.30	-	7.26	-	-	434	529	250	< 4	5	1,780	282	-	< 0.1	5	7.5	18	27.1	41.6	136	2,930	3.15	1,680	0.42	-
USGS92-12	11/15/2005	14:41	2.7	9.40	-	7.50	-	-	392	478	226	< 4	5	1,650	263	-	< 0.1	5.99	7.6	16	28.1	56.3	125	2,440	2.8	1,420	0.40	-
USGS92-12	02/07/2006	15:32	2.2	9.10	-	7.43	-	-	426	520	193	< 4	4	1,420	227	-	< 0.1	7.57	7.5	15	27.9	27.8	117	2,160	2.5	1,180	0.40	-
USGS92-12	05/24/2006	10:55	1.8	9.30	-	7.41	-	-	401	490	169	< 4	4	1,270	205	-	< 0.1	7.54	8.2	14	27.6	29.2	109	1,860	2.33	1,070	0.41	-
USGS92-12	08/22/2006	11:45	1.62	8.80	1.88	7.47	-	-	368	448	154	< 4	3	1,150	187	-	< 0.1	8.95	7.4	14	28.5	31.4	102	1,780	2.3	943	0.43	-
USGS92-12	12/06/2006	10:30	1.94	7.02	-	7.60	-	-	365	446	136	< 4	3	1,010	162	-	< 0.1	8.53	7.6	13	27.9	28.8	94	1,630	2.1	856	0.50	-
USGS92-12	03/13/2007	12:55	1.843	9.73	8.23	7.12	-	-	353	430	135	< 4	3	990	158	-	< 0.1	9.15	7.8	13	27.6	-	92	1,510	1.99	772	0.48	-
USGS92-12	10/02/2007	17:10	2.49	12.10	-	7.30	-	-	380	464	208	< 4	4	1,410	215	-	< 0.1	9.19	7.6	13	26.9	92.1	106	2,220	2.79	1,240	0.5	-
USGS92-12	03/25/2008	15:30	2.071	9.29	0.70	7.20	-	-	364	445	145	< 4	3	1,040	166	-	< 0.1	11.3	7.6	10	26.5	30.1	86	1,610	2.07	912	0.50	-
USGS92-12	10/22/2008	17:00	1.828	8.56	0.59	7.03	-	-	345	421	133	< 4	3	958	152	-	< 0.1	10.1	7.5	11	29.1	33.4	91	1,450	1.87	733	0.60	-
USGS92-12	04/17/2009	12:30	1.873	8.59	2.12	7.22	-	-	340	415	130	< 4	3	915	143	-	< 0.1	10.20	7.6	11	26.4	85.9	72	1,460	1.9	751	0.50	-
USGS92-12	10/02/2009	16:30	2.74	8.89	1.21	7.20	-	-	373	456	220	< 4	4	1,550	244	-	< 0.05	7.8	7.4	15	27.3	54	109	2,360	2.76	1,340	0.50	-
USGS92-12	04/13/2010	14:30	2.115	8.80	0.72	7.17	-	-	372	454	165	< 4	3	1,160	182	-	< 0.05	9	7.5	14	26.8	30	98	1,840	2.24	963	0.50	-
USGS92-12	09/16/2010	14:00	2.558	8.69	1.09	7.09	-	-	398	485	197	< 4	3	1,380	215	-	< 0.05	5.75	7.4	15	27.4	35.7	109	2,180	2.46	1,160	0.50	-
USGS92-12	05/03/2011	15:30	2.509	8.80	2.59	7.14	-	-	430	525	194	< 4	4	1,380	217	-	< 0.05	4.03	7.6	14	25.6	36.5	108	2,190	2.51	1,290	0.40	-
USGS92-12	09/18/2011	18:02	3.210	8.87	0.30	7.21	2,080	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2,760	-	-	-	-
USGS92-12	10/11/2012	11:39	3.152	7.80	0.86	7.06	2,049	136.2	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	2,840	-	-	-	-
USGS92-12 [15]	05/07/2013	10:51	3.354	8.69	0.71	7.00	2,180	-25.3	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	3,080	-	-	-	-
USGS93-3	06/01/2000	16:55	97.6	24.80	-	6.50	-	-	396	483	1,080	< 1	39,800	3,770	257	-	-	< 0.05	7.1	403	-	-	23,400	67,000	87	1,730	-	< 0.08
USGS93-3	08/07/2001	18:55	94.9	25.20	-	6.80	-	-	456	556	960	< 1	41,600	3,390	241	-	15.0	< 0.05	6.9	425	19.4	-	22,600	68,200	79.2	100	-	-
USGS93-3	08/15/2001	19:10	79.3	24.70	-	6.90	-	-	418	510	960	< 1	41,800	3,450	257	-	15.7	< 0.05	7.0	430	22.1	-	25,300	68,400	73.9	2,320	-	-
USGS93-3	11/07/2001	10:05	- [12]	24.44	-	6.10	-	-	472	576	930	< 1	39,700	3,290	236	-	15.6	< 0.05	6.7	383	-	21.5	23,600	62,300	52.3	1,270	-	-
USGS93-3	02/20/2002	9:00	92	24.80	-	6.46	-	-	395	482	929	< 4	42,300	3,310	241	-	15.9	< 0.05	6.8	422	15	-	22,500	67,200	61.2	888	-	-
USGS93-3	05/22/2002	9:30	92.1	23.90	-	6.62	-	-	434	529	916	< 4	42,100	3,150	210	-	14.9	< 0.05	6.8	386	22	-	22,800	68,100	69.3	1,870	0.19	-
USGS93-3	08/20/2002	16:25	90	24.50	-	6.40	-	-	463	565	897	< 4	42,400	3,230	242	-	14.9	< 0.05	6.8	284	20	20	22,800	68,000	71.7	1,170	0.17	-
USGS93-3	11/05/2002	16:10	99.4	24.00	-	6.56	-	-	469	572	981	< 4	38,400	3,420	236	-	14.9	< 0.05	6.8	439	12	20	22,800	67,700	61.7	1,240	0.18	-
USGS93-3	03/04/2003	15:45	95	23.50	-	6.50	-	-	458	559	900	< 4	41,000	3,130	215	-	14.3	< 0.05	6.8	416	19	19	23,900	67,600	51.5	1,180	0.20	-
USGS93-3	05/28/2003	13:15	90.8	24.60	-	6.62	-	-	512	625	886	< 1	40,200	3,130	222	-	14.0	< 0.05	6.7	486	20	20	24,100	68,100	93.5	967	0.22	-
USGS93-3	08/14/2003	14:08	81.3	25.00	-	6.81	-	-	517	631	867	< 1	41,800	3,050	216	-	15.3	< 0.05	6.7	446	22	24	22,900	68,600	88.6	791	0.19	-
USGS93-3	11/04/2003	16:45	86.7	23.20	-	6.45	-	-	510	622	606	< 4	41,900	2,210	168	-	15.7	< 0.05	6.8	427	17	20	19,600	67,500	50.4	859	0.21	-
USGS93-3	06/08/2004	19:05	90.6	23.90	-	6.76	-	-	468	571	911	< 4	40,000	3,130	208	-	15.2	< 0.05	6.8	416	23	26	22,400	66,500	96.7	1,330	0.15	-

Table 2. Inorganic Water Chemistry Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Well No.	Date	Time	Field SC mS/cm	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Field TDS mg/L	Field ORP mV	Alkalinity as CaCO3 mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Hardness, Total as CaCO3 mg/L	Magnesium mg/L	Manganese mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	Lab pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids mg/L	Specific Conductance at 25°C mS/cm	Sulfate mg/L	Flouride mg/L	Iron mg/L
USGS93-3	09/14/2004	16:25	99.6	24.50	-	7.12	-	-	464	566	991 [3]	< 4	43,300 [3]	3,440	234 [3]	-	16.6	< 0.05	6.9	467 [3]	25 [3]	27 [3]	24,700 [3]	68,300	98.6	1,360 [3]	0.20	-
USGS93-3	11/17/2004	12:15	107.6	22.90	-	6.75	-	-	438	534	922	< 4	35,800	3,200	220	-	14.7	< 0.05	6.7	538	19	20	23,700	66,900	98.6	1,100	0.20	-
USGS93-3	03/02/2005	11:05	96.1	23.00	-	6.55	-	-	466	568	1,010	< 4	43,300	3,470	230	-	15.9	< 0.05	6.8	500	22	22	27,100	66,700	97.6	1,300	0.23	-
USGS93-3	05/25/2005	15:52	101.5	23.30	-	6.43	-	-	399	487	1,040	< 4	42,500	3,580	241	-	15.8	< 0.05	6.7	569	20	18	27,200	64,600	95.5	1,400	0.25	-
USGS93-3	08/17/2005	12:55	101.2	25.70	-	6.45	-	-	449	548	990	< 4	37,900	3,390	224	-	14.0	0.54	6.9	421	14	23	24,700	65,800	97.3	1,250	0.21	-
USGS93-3	11/16/2005	16:40	106.2	22.00	-	6.75	-	-	384	468	1,130	< 4	42,700	3,900	263	-	15.8	< 0.05	6.8	472	20	19	27,600	63,600	98.5	1,270	0.20	-
USGS93-3	02/09/2006	15:20	98.9	20.00	-	6.81	-	-	431	525	977	< 4	40,700	3,210	188	-	21.3	< 0.05	6.9	521	23	22	24,700	64,100	96.7	1,350	0.17	-
USGS93-3	05/24/2006	18:20	89.88	23.01	-	6.53	-	-	409	499	1,020	< 4	42,900	3,360	200	-	18.7	< 0.05	7.4	470	22	21	25,100	56,600	97.1	1,340	0.18	-
USGS93-3	08/23/2006	14:50	97.9	23.20	0.15	6.49	-	-	390	476	964	< 4	40,900	3,170	186	-	14.6	< 0.05	6.7	403	24	34	24,200	63,100	99.8	1,330	0.20	-
USGS93-3	12/07/2006	12:05	95.21	21.64	0.16	6.45	-	-	400	488	947	< 4	41,100	3,190	199	-	16.3	< 0.05	6.9	445	24	21	23,800	64,300	99.5	1,320	0.20	-
USGS93-3	03/15/2007	13:30	90.79	22.42	0.07	6.41	-	-	401	489	1,040	< 4	41,900	3,590	240	-	17.1	< 0.05	6.8	468	138	-	26,000	64,700	96.7	1,240	0.18	-
USGS93-3	10/03/2007	11:50	89.28	22.57	0.32	6.92	-	-	401	483	936 [3]	< 4	40,300 [3]	3,170	201 [3]	-	15.6	< 0.05	6.7	375 [3]	23 [3]	26 [3]	21,800 [3]	61,600	98.6	1,330 [3]	0.2	-
USGS93-3	03/27/2008	11:15	82.80	24.00	-	6.83	-	-	434	529	846 [3]	< 4	37,300 [3]	2,950	202 [3]	-	13.0	< 0.05	6.8	386 [3]	22 [3]	67 [3]	21,200 [3]	55,700	85.6	2,440 [3]	0.20	-
USGS93-3	10/26/2008	11:45	76.91	21.97	0.06	6.85	-	-	431	526	919	< 4	36,000	3,190	219	-	15.8	< 0.05	7.0	358	17	32	21,000	53,700	81.2	1,340	0.20	-
USGS93-3	04/15/2009	15:00	64.50	20.63	0.06	6.75	-	-	714	871	597	< 4	25,200 [3]	2,180	168 [3]	-	9.6	< 0.05	7.2	272 [3]	16.0 [3]	< 20 [3]	15,600 [3]	40,800	66.3	987 [3]	0.30	-
USGS93-3	10/01/2009	14:00	60.77	19.67	0.26	6.69	-	-	674	822	578	< 4	26,400	2,120	164	-	9.4	< 0.01	7.1	239	27.3	37.4	14,000	38,000	61.5	884	0.20	-
USGS93-3	04/15/2010	11:55	58.88	19.77	0.82	7.15	-	-	695	847	515	< 4	25,100 [3]	1,910	152	-	8.2 [3]	< 0.01	7.1	244	21 [3]	32 [3]	14,300 [3]	36,700	57.2	1,020 [3]	0.30	-
USGS93-3	09/16/2010	10:25	47.54	19.13	0.86	7.00	-	-	817	997	408	< 4	17,700 [3]	1,540	127	-	7.7 [3]	< 0.01	7.2	185	20.5 [3]	52.3 [3]	11,400 [3]	27,900	44.9 [6]	1,130 [3]	0.30	-
USGS93-3	05/10/2011	12:40	31.88	20.12	0.37	7.02	-	-	1030	1,250	231	< 4	11,600	886	75	-	4.4	< 0.01	7.3	128	28	25	7,490	20,500	30.8	1,390	0.50	-
USGS93-3	09/22/2011	16:38	29.76	20.06	0.39	7.01	19,340	-	-	-	-	-	10,800 [3]	-	-	-	-	-	-	-	-	-	-	17,200	-	-	-	-
USGS93-3	05/16/2012	15:07	19.98	19.60	0.14	7.26	12,980	-	-	-	-	-	6,530 [3]	-	-	-	-	-	-	-	-	-	-	10,900	-	-	-	-
USGS93-3	10/10/2012	18:28	14.93	17.80	0.37	7.45	9,609	-	-	-	-	-	4,470 [3]	-	-	-	-	-	-	-	-	-	-	9,030	-	-	-	-
USGS93-3	05/08/2013	13:56	11.70	18.20	0.14	7.44	9,541	194.9	-	-	-	-	2,570 [3]	-	-	-	-	-	-	-	-	-	-	7,190	-	-	-	-
USGS93-3	09/25/2013	17:08	10.51	18.03	0.06	7.45	6,829	6.5	-	-	-	-	2,150 [3]	-	-	-	-	-	-	-	-	-	-	6,580	-	-	-	-
USGS93-4A	04/18/2009	17:05	3.162	9.03	0.29	7.28	-	-	811	990	131	< 4	30	721	96	-	< 0.1	22.20	7.6	7	23.1	24.0 [3]	507	2,080	3.2	880 [3]	0.40	-
USGS93-5	04/17/2009	15:00	27.73	9.73	0.09	6.96	-	-	313	382	658	< 4	9,470 [3]	3,120	359	-	1.6	< 0.05	6.8	26	6.0 [3]	17.0 [3]	4,640 [3]	15,800	27.1	355 [3]	0.20	-
USGS93-5	09/18/2011	17:12	26.12	9.80	0.25	7.12	16,970	-	-	-	-	-	9,140	-	-	-	-	-	-	-	-	-	-	16,200	-	-	-	-
M-60 (city)	05/26/2005	10:20	1.73	8.50	-	7.48	-	-	433	529	55	< 4	149	255	29	-	0.2	< 0.05	7.7	6	18	17.6	302	1,150	1.77	237	0.49	-
Lockman (city)	05/26/2005	11:05	2.4	9.30	-	7.58	-	-	432	521	58	< 4	173	273	31	-	< 0.1	< 0.05	7.6	5	19.1	17.2	312	1,170	1.84	235	0.45	-

Footnotes:

[1] RL - Analyte reporting limit.
[2] QCL - Quality control limit.
[3] D - RL increased due to sample matrix interference
[4] MCL - Maximum contaminant level.
[5] ND - Not detected at the reporting limit.
[6] E - Estimated value. Result exceeds lab intstrument upper quantitation limit.
[7] J - Estimated value. The analyte was present but less than the reporting limit.
[8] H - Analysis performed past recommended holding time.
[9] PH - At time of analysis sample pH was <4.5, unable to analyze for Alkalinity
[10] F - The reporting limit reflects a 5 times dilution. The sample was diluted due to foaming.
[11] MNW - Meter failure, reading recording in field notes, but not used.
[12] OR- Over range of meter, SC>2.0mS/cm.
[13] V - Value questionable compared to other samples at this site. No rerun value available. Value not used in interpretations for this report.
[14] DL - Data logger deployed. Additional data available for this site.
[15] NDL - New data logger deployed after sampling. Additional data available for this site.

Table 3 - Monitoring Well Network BTEX and TPH Analytical Data

Pioneer Natural Resources USA, Inc. - Mesa-Biere #1-22 Groundwater Investigation

Geosyntec Project No.: PNR0522

Last Update: 10/17/2013

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
LAW-M01	04/20/2009	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
LAW-M03	03/13/2007	17:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
LAW-M03	03/27/2008	10:30	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
LAW-M03	10/23/2008	15:35	< 0.5		< 0.5		< 0.5		< 1.0		< 1.0	
LAW-M03	04/18/2009	15:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
LAW-M03	04/13/2010	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
LAW-M03	05/05/2011	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
LAW-M05	04/20/2009	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-10	04/16/2009	15:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-18	11/08/2001	15:30	53.0		21.0		1.80		10		0.2	
M-18	08/23/2006	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-18	12/06/2006	12:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-18	04/22/2009	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-18	10/06/2009	16:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-18	04/19/2010	17:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-18	09/20/2010	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-18	05/07/2011	9:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27 (Reddoor)	08/16/2001	14:35	< 0.5		0.3	7	< 0.5		< 0.5		< 0.1	
M-27	08/16/2001	14:45	< 0.5		0.3	7	< 0.5		< 0.5		< 0.1	
M-27	11/08/2001	8:50	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
M-27	02/20/2002	15:42	< 0.5		< 0.5		< 0.5		< 0.5		1.5	
M-27	05/21/2002	15:05	< 0.5		< 0.5		< 0.5		< 0.5		1.3	
M-27	08/20/2002	17:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	11/06/2002	9:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	03/05/2003	13:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	05/28/2003	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	08/13/2003	11:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	11/06/2003	10:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	06/08/2004	15:15	0.77		< 0.5		< 0.5		0.52		< 0.1	
M-27	09/15/2004	12:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	11/18/2004	15:35	< 0.5		< 0.5		< 0.5		0.48		< 0.1	
M-27	03/01/2005	12:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	05/24/2005	11:20	< 0.5		< 0.5		< 0.5		0.45		< 0.1	
M-27	08/16/2005	9:30	< 0.5		< 0.5		0.49		< 0.5		< 0.1	
M-27	11/15/2005	14:28	< 0.5		< 0.5		< 0.5		0.49	7	< 0.1	
M-27	02/07/2006	13:10	< 0.5		0.5		< 0.5		< 0.5		< 0.1	
M-27	05/23/2006	14:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	08/22/2006	14:30	< 0.5		0.4	7	< 0.5		< 0.5		0.5	
M-27	12/06/2006	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	03/14/2007	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
M-27	10/04/2007	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	03/27/2008	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-27	10/24/2008	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-27	04/22/2009	9:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-27	10/05/2009	17:20	6.1		1.3		< 0.5		0.81		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
M-27	04/16/2010	17:35	1.4		0.5		< 0.5		< 0.5		2.9	
M-27	09/21/2010	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-27	05/07/2011	10:15	< 0.5		< 0.5		< 0.5		< 0.5		1.6	
M-28 (Lockman)	06/01/2000	12:00	14		2.8		< 0.5		< 0.5		-	
M-28	08/09/2001	12:15	19		< 0.5	7	< 0.5		< 1.0		< 1.0	
M-28	08/16/2001	17:00	19		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	02/21/2002	8:40	< 0.5		< 0.5		< 0.5		< 1.0		< 1.0	
M-28	05/23/2002	9:30	20		< 0.5		< 0.5		< 0.5		2.7	
M-28	08/21/2002	10:00	21		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	11/06/2002	11:20	23		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	03/05/2003	15:30	22		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	05/13/2003	16:45	20		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	08/13/2003	15:35	23		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	11/05/2003	10:30	21		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	03/16/2004	17:34	19		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	06/08/2004	17:18	12		< 0.5		< 0.5		0.91		< 1.0	
M-28	09/15/2004	14:00	22		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	11/19/2004	8:36	18.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	03/01/2005	15:45	19.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	05/24/2005	13:10	16.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	08/16/2005	13:15	16.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	11/15/2005	16:35	18.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	02/07/2006	16:30	19.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	05/23/2006	16:20	18.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	08/22/2006	16:45	20.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	12/06/2006	14:40	19.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	03/15/2007	10:15	19.0		< 0.5		< 0.5		< 0.5		< 1.0	8
M-28	10/03/2007	16:40	19.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	03/27/2008	9:50	15.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	10/26/2008	14:30	12.0		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	04/15/2009	11:20	6.4		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	10/01/2009	15:45	5.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	04/15/2010	11:30	1.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	09/16/2010	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	05/05/2011	17:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	09/19/2011	0:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-28	05/17/2012	14:20	< 1.0		< 1.0		< 1.0		< 1.0		1.0	
M-28	09/19/2011	11:36	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
M-28	05/17/2012	14:20	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
M-28	10/11/2012	13:57	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
M-28 Dup	10/11/2012	13:57	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
M-28	05/07/2013	16:04	0.26	7	< 1.0		< 1.0		< 1.0		< 1	
M-28	09/25/2013	14:42	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
M-30	06/01/2000	12:30	< 0.5		< 0.5		< 0.5		< 0.5		-	
M-30	02/22/2002	13:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-30	05/22/2002	17:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-30	08/21/2002	10:40	< 0.5		0.49		< 0.5		< 0.5		< 0.1	
M-30	11/19/2004	8:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-30	03/02/2005	17:50	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-31 (Trottier)	06/01/2000	13:40	41	3	< 0.5		< 0.5		0.88		-	
M-31	08/09/2001	11:05	47		< 0.5		< 0.5		< 1.0		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
M-31	08/16/2001	17:30	38		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	11/08/2001	16:00	24		< 0.5		< 0.5		< 1.0		< 1.0	
M-31	02/21/2002	9:45	42		< 0.5		< 0.5		< 0.5		3.4	
M-31	05/22/2002	15:45	38		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	08/21/2002	10:45	41		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	11/06/2002	10:35	23		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	03/05/2003	14:10	38		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	05/13/2003	16:00	37		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	08/13/2003	14:40	35		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	11/05/2003	11:35	30		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	03/16/2004	16:00	32		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	06/08/2004	16:40	35		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	09/15/2004	15:00	-		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	11/18/2004	17:00	32		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	03/01/2005	13:45	32		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	05/24/2005	15:05	28		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	08/16/2005	11:30	29		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	11/15/2005	15:30	29		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	02/07/2006	14:00	30		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	05/23/2006	17:20	27		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	08/23/2006	13:30	29		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	12/06/2006	15:45	28		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	03/15/2007	11:30	30		< 0.5		< 0.5		< 0.5		< 1.0	8
M-31	10/04/2007	14:30	30		< 0.5		< 0.5		0.66		< 1.0	
M-31	03/27/2008	10:30	24		< 0.5		< 0.5		0.66		< 1.0	
M-31	10/26/2008	17:20	27		< 0.5		< 0.5		0.66		< 1.0	
M-31	04/15/2009	16:15	25		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	10/01/2009	16:20	25		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	04/15/2010	13:10	25		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	09/16/2010	11:10	26		< 0.5		< 0.5		< 0.5		5.5	
M-31	05/07/2011	12:30	26		< 0.5		< 0.5		< 0.5		< 1.0	
M-31	09/22/2011	13:47	26		0.26	7	< 1.0		< 1.0		< 1	
M-31	05/18/2012	11:38	26		< 1.0		< 1.0		< 1.0		< 1	
M-31	10/25/2012	13:10	26		< 1.0		< 1.0		< 1.0		< 1	
M-31	05/08/2013	10:30	23		< 1.0		< 1.0		< 1.0		< 1	
M-31-13	05/11/2013	15:30	3.7		< 1.0		< 1.0		< 1.0		< 1	
M-31-13 Dup	05/11/2013	15:30	4.0		< 1.0		< 1.0		< 1.0		< 1	
M-31-13	09/26/2013	16:12	8.0		< 1.0		< 1.0		< 1.0		< 1	
M-32	11/09/2001	9:00	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
M-36	09/05/2001	15:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-36	11/09/2001	11:05	< 0.5		< 0.5		< 0.5		< 1.0		-	
M-38	09/05/2001	16:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-38	11/09/2001	11:40	< 0.5		< 0.5		< 0.5		< 0.1		-	
M-39	11/07/2001	15:45	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
M-60 (Whitmer)	05/31/2000	0:00	< 0.5		< 0.5		< 0.5		< 0.5		-	
M-60	08/10/2001	10:00	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
M-60	08/22/2001	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	11/09/2001	10:20	< 0.5		< 0.5		< 0.5		< 1.0		-	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
M-60	02/22/2002	14:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	05/22/2002	16:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	08/21/2002	9:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	11/05/2002	14:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	03/04/2003	14:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	05/13/2003	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	08/14/2003	12:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	11/04/2003	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	03/18/2004	13:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	06/09/2004	8:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	09/16/2004	11:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	11/18/2004	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	03/02/2005	16:44	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	08/16/2005	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	11/17/2005	10:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	02/09/2006	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	05/25/2006	11:21	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	08/24/2006	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	12/07/2006	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	03/14/2007	16:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
M-60	10/05/2007	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	03/27/2008	11:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
M-60	10/27/2008	17:55	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60	04/21/2009	19:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60	10/01/2009	15:04	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60	04/13/2010	12:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60	09/22/2010	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60	05/06/2011	16:18	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60	09/19/2011	15:06	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
M-60	05/18/2012	11:15	<1.0		<1.0		<1.0		<1.0		< 1	
M-60 Dup	05/18/2012	11:15	<1.0		<1.0		<1.0		<1.0		< 1	
M-60	10/10/2012	17:15	<1.0		<1.0		<1.0		<1.0		< 1	
M-60	05/11/2013	13:19	<1.0		<1.0		<1.0		<1.0		< 1	
M-60	09/26/2013	12:30	<1.0		<1.0		<1.0		<1.0		< 1	
M-69	04/15/2009	14:17	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
M-80	04/18/2009	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-1B	10/16/2006	15:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-1B	03/14/2007	12:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
MOC-1B	10/03/2007	10:35	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
MOC-1B	03/25/2008	18:30	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
MOC-1B	10/23/2008	14:15	< 0.5		< 0.5		< 0.5		< 1.0		< 1.0	
MOC-1B	04/21/2009	12:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-1B	10/03/2009	12:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-1B	04/13/2010	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-1B	09/16/2010	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-1B	05/04/2011	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-2	10/16/2006	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-2	03/13/2007	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-2	10/05/2007	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-2	03/26/2008	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
MOC-2	10/25/2008	13:07	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-2	04/21/2009	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-2	10/03/2009	14:55	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-2	04/16/2010	15:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-2	09/21/2010	14:21	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-2	05/06/2011	0:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-3	10/17/2006	12:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-3	03/14/2007	11:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-3	10/02/2007	19:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
MOC-3	03/25/2008	16:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-3	10/23/2008	12:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-3	04/20/2009	19:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-3	10/03/2009	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-3	04/13/2010	15:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-3	09/16/2010	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-3	05/04/2011	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-4	10/17/2006	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-4	10/04/2007	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-4	03/26/2008	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-4	10/25/2008	12:08	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-4	04/23/2009	13:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-4	10/03/2009	12:50	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-4	04/14/2010	17:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-4	09/22/2010	12:25	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-4	05/05/2011	15:30	1.7		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20A	10/16/2006	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20A	03/13/2007	13:40	< 0.5		0.67		< 0.5		< 0.5		< 0.1	
MOC-20A	10/03/2007	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20A	03/26/2008	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20A	10/24/2008	11:46	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20A	04/22/2009	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20A	10/04/2009	9:10	< 0.5		0.63		< 0.5		< 0.5		< 1.0	
MOC-20A	04/14/2010	10:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20A	09/17/2010	9:30	< 0.5		0.83		< 0.5		< 0.5		< 1.0	
MOC-20A	05/05/2011	10:45	< 0.5		0.83		< 0.5		< 0.5		< 1.0	
MOC-20B	10/16/2006	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20B	03/13/2007	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20B	10/03/2007	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20B	03/26/2008	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
MOC-20B	10/23/2008	17:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20B	04/21/2009	12:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20B	10/02/2009	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20B	04/14/2010	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20B	09/21/2010	13:27	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
MOC-20B	05/05/2011	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-4	08/10/2001	13:15	422		885		233		594		628.0	
PNR-4	08/10/2001	13:20	375		835		123		349		635.0	
PNR-4	11/08/2001	15:00	437		2,040		1,280		3,850		992.0	
PNR-4	Plugged and abandoned											

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-5	06/01/2000	18:10	1.2		0.75		6.7		4.20		< 0.1	
PNR-5	08/08/2001	11:00	0.9		1.6		3.9		< 1.0		< 0.1	
PNR-5	08/15/2001	11:00	2.1		8.8		2.6		8.1		1.4	
PNR-5	11/07/2001	11:10	< 0.5		< 10		< 5.0		< 0.5		< 0.1	
PNR-5	02/20/2002	10:02	1.2		0.98		4.3		0.68		< 0.1	
PNR-5	05/22/2002	10:40	1.0		1.2		8.5		0.85		< 0.1	
PNR-5	08/20/2002	17:10	0.9		0.37		6.2		0.62		1.3	
PNR-5	11/06/2002	11:10	1.4		0.93		6.9		0.57		< 0.1	
PNR-5	03/04/2003	16:30	0.9		< 0.5		5.8		< 0.5		< 0.1	
PNR-5	05/28/2003	12:35	0.7		0.61		9.6		0.87		< 0.1	
PNR-5	08/13/2003	14:59	0.86		< 0.5		4.5		0.72		< 0.1	
PNR-5	11/04/2003	15:30	1.3		1.0		10.0		1.1		< 0.1	
PNR-5	03/17/2004	10:15	0.74		1.3		14		1.1		< 0.1	
PNR-5	06/09/2004	9:40	1.4		< 0.5		23		< 0.5		< 0.1	
PNR-5	09/14/2004	16:20	1.1		25		1.3		< 0.5		< 0.1	
PNR-5	11/17/2004	13:50	0.99		25		< 5.0		1.1		< 0.1	
PNR-5	03/02/2005	12:15	1.1		36		1.3		< 0.5		< 0.1	
PNR-5	05/25/2005	17:20	0.9		30		0.71		< 0.5		1.0	
PNR-5	08/17/2005	11:00	0.8		40		0.46		< 0.5		< 0.1	
PNR-5	11/16/2005	13:00	1.1		1.1		65		< 0.5		< 0.1	
PNR-5	02/09/2006	15:20	0.43	7	< 0.5		73		0.38	7	< 0.1	
PNR-5	05/25/2006	10:30	0.46	7	< 0.5		60		< 0.5		< 0.1	
PNR-5	08/23/2006	15:40	0.7		< 0.5		64		< 0.5		< 0.1	
PNR-5	12/07/2006	13:25	0.8		< 0.5		58		< 0.5		< 0.1	
PNR-5	03/14/2007	14:14	0.75		1.2		85		< 0.5		< 0.1	
PNR-5	10/05/2007	11:40	< 0.5		< 0.5		0.43		0.76		< 0.1	
PNR-5	03/27/2008	16:30	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-5	10/27/2008	13:35	< 0.5		< 1.0		28		< 1.0		< 1.0	
PNR-5	04/15/2009	14:20	< 0.5		< 0.5		6.7		< 0.5		< 1.0	
PNR-5	10/02/2009	14:00	< 0.5		< 0.5		2.6		< 0.5		< 1.0	
PNR-5	04/15/2010	16:45	< 0.5		< 0.5		2.4		< 0.5		< 1.0	
PNR-5	09/21/2010	11:15	< 0.5		< 0.5		2.4		< 0.5		< 1.0	
PNR-5	05/06/2011	11:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-6	05/31/2000	0:00	< 0.5		< 0.5		< 0.5		< 0.5		-	
PNR-6	08/07/2001	9:55	< 0.5		0.88		< 0.5		< 1.0		< 0.1	
PNR-6	08/15/2001	15:30	< 0.5		0.3	7	< 0.5		< 0.5		< 0.1	
PNR-6	11/07/2001	8:55	< 0.5		0.56		< 0.5		< 1.0		< 0.1	
PNR-6	02/19/2002	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	05/21/2002	12:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	08/19/2002	16:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	11/05/2002	11:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	03/04/2003	10:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	05/13/2003	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	08/13/2003	8:16	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	11/04/2003	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	06/08/2004	10:20	< 0.5		0.46		< 0.5		0.53		< 0.1	
PNR-6	09/14/2004	9:15	< 0.5		< 0.5		< 0.5		< 0.5		0.5	
PNR-6	11/16/2004	10:17	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	02/28/2005	17:30	< 0.5		< 0.5		0.51		< 0.5		< 0.1	
PNR-6	05/23/2005	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	08/16/2005	9:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	11/15/2005	10:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-6	02/07/2006	10:47	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	05/23/2006	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	08/22/2006	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	12/05/2006	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	03/14/2007	10:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	10/02/2007	18:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	03/26/2008	11:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-6	10/22/2008	14:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-6	04/17/2009	15:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-6	10/04/2009	12:55	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-6	04/13/2010	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-6	09/16/2010	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-6	05/03/2011	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	05/31/2000	0:00	27		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	08/07/2001	17:20	35		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	08/15/2001	17:55	20		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	11/07/2001	11:50	40		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-7	02/19/2002	17:05	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	05/22/2002	13:10	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	08/20/2002	15:07	41		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	11/05/2002	14:50	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	03/04/2003	15:05	43		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	08/12/2003	12:20	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	11/04/2003	14:30	38		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	03/17/2004	17:10	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	06/08/2004	18:40	47		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	09/14/2004	18:00	41		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	11/17/2004	13:40	44		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	03/01/2005	17:30	40		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	05/25/2005	13:47	38		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	08/17/2005	10:52	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	11/16/2005	14:00	44		< 0.5		2.2		< 0.5		< 0.1	
PNR-7	02/09/2006	14:15	38		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	05/24/2006	16:10	35		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	08/24/2006	10:24	39		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	12/08/2006	10:15	32		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	03/15/2007	12:15	40		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	10/04/2007	19:00	43		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	03/28/2008	10:30	37		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-7	10/25/2008	17:30	37		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	04/15/2009	17:15	33		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	10/06/2009	15:15	38		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	04/19/2010	13:30	42		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	09/22/2010	14:00	36		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	05/06/2011	15:30	32		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-7	09/23/2011	9:46	31		< 1.0		< 1.0		< 1.0		< 5	
PNR-7 Dup	09/23/2011	9:46	32		< 1.0		< 1.0		< 1.0		< 5	
PNR-7	05/18/2012	9:20	30		< 1.0		< 1.0		< 1.0		< 1	
PNR-7	10/25/2012	14:01	32		0.11	7	< 1.0		< 1.0		< 1	
PNR-7	05/08/2013	17:52	32		< 1.0		< 1.0		< 1.0		< 1	
PNR-7-13	05/12/2013	14:36	23		< 1.0		< 1.0		< 1.0		< 1	
PNR-7-13	9/25/2013	12:17	0.58	7	< 1.0		< 1.0		< 1.0		< 1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-7-13 Dup	9/25/2013	12:17	0.58	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-8	05/31/2000	0:00	< 0.5		< 0.5		< 0.5		< 0.5		-	
PNR-8	08/07/2001	13:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	08/16/2001	18:10	< 0.5		0.6		< 0.5		0.54		< 0.1	
PNR-8	11/06/2001	16:30	< 0.5		< 0.5	7	< 0.5		< 1.0		0.5	
PNR-8	02/22/2002	16:00	< 0.5		< 0.5	7	< 0.5		< 0.5		< 0.1	
PNR-8	05/21/2002	17:45	< 0.5		< 0.5	7	< 0.5		< 0.5		< 0.1	
PNR-8	08/21/2002	10:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	11/05/2002	15:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	03/04/2003	12:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	05/13/2003	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	08/12/2003	9:46	1.1		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	11/04/2003	12:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	03/18/2004	11:30	< 0.5		< 0.5		< 0.5		< 0.5		2.7	
PNR-8	06/08/2004	18:40	< 0.5		< 0.5		< 0.5		< 0.5		0.7	
PNR-8	09/14/2004	17:05	< 0.5		< 0.5		< 0.5		< 0.5		0.4	
PNR-8	11/16/2004	16:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	03/02/2005	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	05/26/2005	10:46	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	08/18/2005	11:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	11/17/2005	9:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	02/09/2006	9:45	0.42	7	< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	05/24/2006	17:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	08/24/2006	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	12/07/2006	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	03/14/2007	13:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-8	10/04/2007	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	03/28/2008	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-8	10/27/2008	16:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-8	04/19/2009	14:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-8	10/04/2009	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-8	04/19/2010	8:25	< 0.5		0.68		< 0.5		< 0.5		< 1.0	
PNR-8	09/22/2010	13:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-8	05/04/2011	10:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-9	06/01/2000	10:10	< 0.5		0.86		< 0.5		< 0.5		-	
PNR-9	08/09/2001	9:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	08/16/2001	13:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	11/07/2001	14:30	< 0.5		< 0.5		< 0.5		< 1.0		0.9	
PNR-9	02/20/2002	14:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	05/22/2002	10:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	08/20/2002	16:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	11/05/2002	14:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	03/04/2003	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	05/27/2003	18:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	08/13/2003	10:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	11/04/2003	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	06/08/2004	13:35	1.8		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	09/14/2004	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	11/16/2004	16:12	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	03/01/2005	12:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	05/24/2005	17:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	08/16/2005	12:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-9	11/15/2005	15:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	02/08/2006	12:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	05/23/2006	13:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	08/23/2006	9:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	12/06/2006	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	03/13/2007	16:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-9	10/04/2007	10:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	03/27/2008	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-9	10/23/2008	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-9	04/18/2009	16:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-9	10/03/2009	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-9	04/13/2010	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-9	09/20/2010	15:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-9	05/05/2011	14:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-10	06/01/2000	8:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	08/08/2001	18:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	08/16/2001	13:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	11/07/2001	12:30	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-10	02/20/2002	13:38	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	05/21/2002	13:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	08/20/2002	12:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	11/05/2002	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	03/04/2003	16:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	05/27/2003	17:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	08/13/2003	10:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	11/04/2003	13:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	06/08/2004	14:10	0.43		0.59		< 0.5		0.88		< 0.1	
PNR-10	09/14/2004	11:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	11/16/2004	11:28	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	03/01/2005	11:06	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	05/24/2005	15:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	08/16/2005	10:48	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	11/15/2005	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	02/07/2006	14:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	05/23/2006	12:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	08/23/2006	10:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	12/06/2006	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	03/13/2007	15:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-10	10/03/2007	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	03/27/2008	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-10	10/23/2008	14:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-10	04/18/2009	14:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-10	10/03/2009	11:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-10	04/13/2010	15:46	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-10	09/20/2010	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-10	05/05/2011	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-12	05/31/2000	0:00	< 0.5		< 0.5		< 0.5		< 0.5		-	
PNR-12	08/08/2001	15:00	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-12	08/15/2001	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	11/06/2001	16:20	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-12	02/20/2002	11:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	05/21/2002	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-12	08/19/2002	16:05	< 0.5		0.43		< 0.5		< 0.5		< 0.1	
PNR-12	11/05/2002	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	03/04/2003	13:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	05/27/2003	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	08/13/2003	8:05	0.65		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	11/04/2003	12:35	< 0.5		0.59		< 0.5		< 0.5		< 0.1	
PNR-12	06/08/2004	9:15	< 0.5		1.4		< 0.5		< 0.5		< 0.1	
PNR-12	09/14/2004	10:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	11/16/2004	9:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	02/28/2005	17:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	05/23/2005	18:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	08/15/2005	6:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	11/15/2005	9:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	02/07/2006	13:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	05/23/2006	10:50	0.50	7	< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	08/22/2006	16:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	12/05/2006	15:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	03/14/2007	12:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	10/03/2007	13:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	03/26/2008	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-12	10/23/2008	10:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-12	04/20/2009	18:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-12	10/03/2009	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-12	04/14/2010	11:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-12	09/16/2010	14:50	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-12	05/03/2011	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-13	08/15/2001	18:15	19		0.8		< 0.5		< 0.5		< 0.1	
PNR-13	08/15/2001	19:00	32		1.1		< 0.5		0.49	7	< 0.1	
PNR-13	11/07/2001	13:35	8.2		< 0.5		< 0.5		< 1.0		5.4	
PNR-13	02/19/2002	16:30	6.4		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	05/22/2002	14:00	4.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	08/20/2002	15:45	3.5		0.4		< 0.5		< 0.5		< 0.1	
PNR-13	11/05/2002	15:30	2.1		0.9		< 0.5		< 0.5		< 0.1	
PNR-13	03/04/2003	11:15	1.2		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	05/28/2003	10:05	1.0		0.7		< 0.5		< 0.5		< 0.1	
PNR-13	08/13/2003	10:20	0.85		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	11/04/2003	14:15	2.4		0.71		< 0.5		< 0.5		< 0.1	
PNR-13	06/08/2004	15:30	2.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	09/14/2004	10:00	0.62		< 0.5		0.74		0.49		< 0.1	
PNR-13	11/16/2004	15:30	1.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	03/01/2005	13:25	0.78		< 0.5		1.3		< 0.5		< 0.1	
PNR-13	05/24/2005	12:00	0.65		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	08/17/2005	9:40	1.0		< 0.5		0.86		< 0.5		< 0.1	
PNR-13	11/16/2005	10:50	1.2		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	02/08/2006	10:40	1.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	05/24/2006	13:15	0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	08/22/2006	14:25	0.9		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	12/06/2006	11:30	1.8		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	03/14/2007	16:20	0.81		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	10/04/2007	17:30	0.43		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	03/27/2008	15:00	0.63		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-13	10/25/2008	14:30	0.5	7	< 0.5		< 0.5		< 0.5		< 1.0	
PNR-13	04/18/2009	17:55	0.7		< 0.5		< 0.5		< 0.5		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-13	10/06/2009	10:50	0.48	7	< 0.5		< 0.5		< 0.5		< 1.0	
PNR-13	04/16/2010	17:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-13	09/17/2010	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-13	05/05/2011	11:30	< 0.5		0.74		< 0.5		< 0.5		< 1.0	
PNR-14	08/09/2001	16:00	4.1		0.6		55		1.9		< 0.1	
PNR-14	08/14/2001	9:45	3.5		1.1		34		0.37	7	< 0.1	
PNR-14	11/07/2001	14:35	18.0		< 0.5	7	9.70		< 1.0		< 0.1	
PNR-14	02/21/2002	11:30	0.9		< 0.5		14		0.68		< 0.1	
PNR-14	05/22/2002	12:05	1.1		0.6		41		1.8		< 0.1	
PNR-14	08/20/2002	17:45	1.0		0.5		32		0.93		< 0.1	
PNR-14	11/06/2002	11:28	0.8		< 0.5		36		0.7		< 0.1	
PNR-14	03/04/2003	17:15	0.9		< 0.5		32		0.5		< 0.1	
PNR-14	05/28/2003	11:45	0.7		0.8		22		0.45		< 0.1	
PNR-14	08/13/2003	15:43	0.64		< 0.5		22		< 0.5		< 0.1	
PNR-14	11/05/2003	11:45	0.62		< 0.5		23		< 0.5		< 0.1	
PNR-14	03/17/2004	10:45	0.33		0.87		12		0.59		0.5	
PNR-14	06/09/2004	10:40	0.9		0.65		17		< 0.5		< 0.1	
PNR-14	09/14/2004	15:35	0.89		7.9		0.58		0.65		< 0.1	
PNR-14	11/17/2004	15:30	0.76		5.9		< 0.5		< 0.5		< 0.1	
PNR-14	03/02/2005	10:50	0.55		3.7		< 0.5		< 0.5		< 0.1	
PNR-14	05/25/2005	9:46	< 0.5		2.2		< 0.5		< 0.5		< 0.1	
PNR-14	08/17/2005	15:18	< 0.5		1.2		0.45		< 0.5		1.6	
PNR-14	11/16/2005	11:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-14	02/09/2006	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-14	05/24/2006	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-14	08/23/2006	16:20	< 0.5		< 0.5		4.1		< 0.5		< 0.1	
PNR-14	12/07/2006	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-14	03/14/2007	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-14	10/04/2007	16:50	0.54		0.64		< 0.5		< 0.5		< 0.1	
PNR-14	03/27/2008	13:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-14	10/27/2008	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-14	04/16/2009	14:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-14	10/02/2009	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-14	04/15/2010	14:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-14	09/20/2010	14:50	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-14	05/06/2011	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-15	08/10/2001	8:15	3.6		6.6		4.5		7.4		< 0.1	
PNR-15	08/14/2001	13:00	3.3		4.8		3.8		4.4		0.5	
PNR-15	11/08/2001	9:10	4.8		6.6		24		< 0.5		2.7	
PNR-15	02/21/2002	14:54	1.8		< 0.5		24		5.7		1.5	
PNR-15	05/22/2002	14:55	2.3		0.7		18		1.4		3.4	
PNR-15	08/21/2002	14:00	2.5		3.8		14		19		1.1	
PNR-15	11/06/2002	14:35	2.8		< 0.5		11		8.5		2.0	
PNR-15	03/05/2003	12:30	6.3		< 0.5		21		230		68.0	
PNR-15	05/28/2003	15:35	4.2		1.2		16		34		4.4	
PNR-15	08/14/2003	9:58	20		32		13		13		0.3	
PNR-15	11/05/2003	14:30	1.9		1.2		12		9.3		1.2	
PNR-15	03/17/2004	13:35	0.77		< 0.5		7.7		0.79		1.2	
PNR-15	06/08/2004	12:45	1.0		< 0.5		9.6		< 0.5		1.1	
PNR-15	09/15/2004	16:30	0.93		8.5		0.79		0.71		< 0.1	
PNR-15	11/18/2004	9:05	0.74		9.4		0.78		0.93		< 0.1	
PNR-15	03/02/2005	12:20	14		12		1.3		6.9		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-15	05/25/2005	10:40	0.45		5.4		< 0.5		< 0.5		< 0.1	
PNR-15	08/17/2005	16:45	0.44		7.4		0.56		< 0.5		< 0.1	
PNR-15	11/16/2005	11:35	< 0.5		< 0.5		4.7		< 0.5		< 0.1	
PNR-15	02/08/2006	10:45	< 0.5		< 0.5		3.6		0.67		< 0.1	
PNR-15	05/24/2006	11:15	< 0.5		0.74		1.5		1.3		3.5	
PNR-15	08/23/2006	17:15	< 0.5		0.66		1.5		0.6		< 0.1	
PNR-15	12/07/2006	16:30	< 0.5		< 0.5		2.4		< 0.5		< 0.1	
PNR-15	03/14/2007	11:40	0.63		< 0.5		2		0.56		< 0.1	
PNR-15	10/04/2007	18:00	0.63		< 0.5		0.76		< 0.5		< 0.1	
PNR-15	03/27/2008	15:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-15	10/27/2008	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-15	04/16/2009	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-15	10/02/2009	11:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-15	04/15/2010	14:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-15	09/22/2010	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-15	05/06/2011	10:20	< 0.5		< 0.5		< 0.5		< 0.5		2.1	
PNR-15	aged - well abandoned Sept											
PNR-16	08/10/2001	15:15	0.32	7	1.00	7	0.42	7	1.0		14.0	
PNR-16	08/16/2001	18:35	< 0.5		0.37	7	< 0.5		0.34	7	< 0.1	
PNR-16	11/06/2001	16:05	< 0.5		< 0.5	7	< 0.5		< 1.0		< 0.1	
PNR-16	02/21/2002	10:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	05/21/2002	15:50	< 0.5		0.83		< 0.5		2.0		< 0.1	
PNR-16	08/20/2002	11:40	< 0.5		0.52		< 0.5		< 0.5		< 0.1	
PNR-16	11/05/2002	14:04	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	03/04/2003	13:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	05/27/2003	18:30	< 0.5		0.5		< 0.5		< 0.5		< 0.1	
PNR-16	08/13/2003	9:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	11/04/2003	12:30	0.75		1.9		< 0.5		0.85		< 0.1	
PNR-16	03/17/2004	16:09	< 0.5		0.53		0.59		< 0.5		0.4	
PNR-16	06/08/2004	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	09/14/2004	12:40	< 0.5		< 0.5		0.78		< 0.5		< 0.1	
PNR-16	11/16/2004	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	03/01/2005	14:30	< 0.5		< 0.5		0.76		< 0.5		< 0.1	
PNR-16	05/24/2005	13:58	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	08/17/2005	9:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	11/15/2005	15:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	02/07/2006	16:47	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	05/24/2006	12:25	< 0.5		0.46	7	< 0.5		< 0.5		< 0.1	
PNR-16	08/22/2006	13:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	12/06/2006	13:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	03/13/2007	12:45	< 0.5		0.44	7	< 0.5		< 0.5		< 0.1	
PNR-16	10/03/2007	10:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	03/26/2008	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-16	10/23/2008	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-16	04/17/2009	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-16	10/03/2009	8:30	< 0.5		0.5		< 0.5		< 0.5		< 1.0	
PNR-16	04/14/2010	15:15	< 0.5		0.5		< 0.5		< 0.5		< 1.0	
PNR-16	09/18/2010	13:00	< 0.5		0.5		< 0.5		< 0.5		< 1.0	
PNR-16	05/04/2011	10:30	< 0.5		0.5		< 0.5		< 0.5		< 1.0	
PNR-17	08/22/2001	12:35	309		640		135		377		15.8	
PNR-17	08/22/2001	13:30	206		342		75		214		30.8	
PNR-17	11/08/2001	11:30	301		1220		582		1720		806.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-17	02/21/2002	17:00	341		682		191		511		62.0	
PNR-17	05/23/2002	10:50	386		877		225		620		53.0	
PNR-17	08/21/2002	15:15	230		438		98		261		140.0	
PNR-17	11/06/2002	15:40	97		195		69		181		200.0	
PNR-17	03/05/2003	13:30	90		245		105		277		82.0	
PNR-17	05/28/2003	10:00	76		202		118		305		41.0	
PNR-17	08/14/2003	11:05	64		119		82		190		180.0	
PNR-17	11/06/2003	11:30	74		75		120		200		150.0	
PNR-17	03/17/2004	15:10	47		12		89		87		56.0	
PNR-17	06/09/2004	15:45	45		1.9		85		13		31.0	
PNR-17	09/16/2004	9:35	33		63		1.7		5.4		10.0	
PNR-17	11/18/2004	12:20	23		56		< 0.5		6.4		120.0	
PNR-17	03/02/2005	15:30	15		34		3.4		18		26.0	
PNR-17	05/25/2005	14:25	15		69		3.6		15		77.0	
PNR-17	08/17/2005	17:25	7.7		39		0.53		5.3		180.0	
PNR-17	11/16/2005	14:01	15		2.3		37		49		98.0	
PNR-17	02/08/2006	14:05	3.7		9.7		20		29		1.8	
PNR-17	05/24/2006	13:50	0.76		2.9		8.3		11		-	13
PNR-17	08/24/2006	12:45	1.8		5.0		28		51		12.0	
PNR-17	12/08/2006	12:30	0.66		4.4		23		40		5.0	
PNR-17	03/15/2007	11:49	< 1		3.3		17		45		14	8
PNR-18	08/08/2001	16:00	< 0.5		0.81		< 0.5		< 1.0		< 0.1	
PNR-18	08/16/2001	11:00	< 0.5		0.78		< 0.5		< 0.5		< 0.1	
PNR-18	11/07/2001	10:20	< 0.5		0.66		< 0.5		< 1.0		0.9	
PNR-18	02/20/2002	11:24	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	05/21/2002	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	08/19/2002	16:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	11/05/2002	11:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	03/04/2003	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	05/13/2003	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	08/14/2003	8:40	0.82		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	11/04/2003	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	06/08/2004	9:55	< 0.5		0.52		< 0.5		0.63		< 0.1	
PNR-18	09/14/2004	8:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	11/18/2004	14:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	02/28/2005	17:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	05/25/2005	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	08/15/2005	18:00	< 0.5		< 0.5		0.75		0.64		< 0.1	
PNR-18	11/15/2005	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	02/07/2006	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	05/23/2006	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	08/22/2006	17:17	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	12/05/2006	14:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	03/14/2007	11:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	10/02/2007	17:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	03/26/2008	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-18	10/22/2008	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-18	04/17/2009	15:50	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-18	10/04/2009	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-18	04/13/2010	13:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-18	09/16/2010	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-18	05/03/2011	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-19	08/07/2001	14:50	1.1		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-19	08/15/2001	16:40	0.35	7	0.41	7	< 0.5		< 0.5		< 0.1	
PNR-19	11/06/2001	15:20	1.4		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-19	02/19/2002	15:05	2.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	05/22/2002	14:55	3.2		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	08/20/2002	12:30	3.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	11/05/2002	13:17	3.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	03/04/2003	12:20	5.1		< 0.5		< 0.5		< 0.5		0.9	
PNR-19	05/27/2003	17:20	5.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	08/13/2003	8:55	5.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	11/04/2003	10:50	5.4		< 0.5		0.46		< 0.5		< 0.1	
PNR-19	03/17/2004	16:40	6.6		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	06/08/2004	13:55	8.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	09/14/2004	14:15	6.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	11/16/2004	13:45	7.8		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	03/01/2005	15:35	7.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	05/25/2005	12:36	7.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	08/17/2005	12:23	7.9		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	11/16/2005	12:00	8.9		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	02/08/2006	12:55	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	05/24/2006	15:20	9.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	08/23/2006	14:05	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	12/07/2006	15:30	12		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	03/14/2007	15:00	12		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	10/03/2007	14:50	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	03/27/2008	16:30	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-19	10/25/2008	15:15	12		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-19	04/19/2009	13:55	12		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-19	10/06/2009	13:45	8.6		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-19	04/19/2010	10:45	11		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-19	09/22/2010	12:30	7.4		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-19	05/04/2011	17:10	4.7		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-19	09/22/2011	10:26	0.20	7	< 1.0		< 1.0		< 1.0		< 5	
PNR-19	05/17/2012	11:30	0.18	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-19	10/24/2012	17:23	0.74	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-19	05/08/2013	18:29	1.50		< 1.0		< 1.0		< 1.0		< 1	
PNR-19	09/28/2013	12:46	0.40	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-20	08/08/2001	9:50	5.4		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-20	08/15/2001	17:15	5.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	11/08/2001	10:00	1.4		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-20	02/19/2002	15:40	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	05/22/2002	11:00	10		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	08/20/2002	13:25	13		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	11/05/2002	16:05	17		0.51		< 0.5		< 0.5		< 0.1	
PNR-20	03/04/2003	14:15	15		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	05/28/2003	11:00	13		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	08/13/2003	11:35	13		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	11/05/2003	12:50	15		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	03/18/2004	12:50	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	06/08/2004	12:15	14		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	09/14/2004	13:42	13		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	11/17/2004	10:40	18		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	03/01/2005	16:25	15		< 0.5		0.57		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-20	05/24/2005	17:35	11		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	08/16/2005	15:45	16		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	11/15/2005	12:15	16		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	02/09/2006	10:50	14		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	05/23/2006	17:55	16		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	08/23/2006	15:50	17		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	12/07/2006	16:10	13		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	03/15/2007	10:18	20		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-20	10/04/2007	10:25	17		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-20	03/27/2008	17:40	16		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-20	10/25/2008	16:30	13		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-20	04/21/2009	15:40	19		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-20	10/06/2009	14:30	17		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-20	04/19/2010	12:40	19		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-20	09/22/2010	13:15	16		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-20	05/04/2011	17:50	16		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-20	09/22/2011	11:17	10		< 1.0		< 1.0		< 1.0		< 5	
PNR-20	05/17/2012	14:50	18		0.33	7	< 1.0		< 1.0		< 1	
PNR-20	10/25/2012	11:32	17		0.25	7	< 1.0		< 1.0		4	
PNR-20 Dup	10/25/2012	11:32	17		0.24	7	< 1.0		< 1.0		< 1	
PNR-20	05/08/2013	11:46	13		< 1.0		< 1.0		< 1.0		< 1	
PNR-20-13	05/12/2013	11:29	16		0.12	7	< 1.0		< 1.0		< 1	
PNR-20-13 Dup	05/12/2013	11:29	16		0.13	7	< 1.0		0.13	7	< 1	
PNR-20-13	09/24/2013	17:15	15		< 1.0		< 1.0		< 1.0		< 1	
PNR-21	08/09/2001	10:15	28		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-21	08/16/2001	16:40	26		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	11/08/2001	11:00	32		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-21	02/21/2002	9:15	32		< 0.5		< 0.5		< 0.5		2.2	
PNR-21	05/22/2002	11:55	33		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	08/21/2002	9:00	35		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	11/05/2002	15:30	37		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	03/05/2003	14:50	36		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	05/28/2003	11:50	32		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	08/13/2003	14:05	25		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	11/05/2003	15:30	29		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	06/08/2004	12:55	34		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	09/14/2004	14:15	37		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	11/17/2004	12:40	31		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	03/01/2005	16:32	29		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	05/24/2005	18:25	28		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	08/16/2005	16:20	28		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	11/15/2005	13:21	28		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	02/09/2006	11:45	27		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	05/24/2006	17:20	24		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	08/23/2006	17:00	28		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	12/07/2006	14:45	22		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	03/15/2007	11:15	25		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-21	10/04/2007	11:40	21		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	03/27/2008	18:20	19		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-21	10/25/2008	15:50	16		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-21	04/21/2009	16:35	14		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-21	10/06/2009	14:00	11		< 0.5		< 0.5		< 0.5		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-21	04/19/2010	11:50	6.1		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-21	09/21/2010	16:20	2.1		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-21	05/05/2011	18:10	0.75		< 0.5		< 0.5		< 0.5		1.3	
PNR-21	09/21/2011	15:45	< 10	10	< 10	10	< 10	10	< 10	10	1	
PNR-21	05/17/2012	15:37	< 2.5	10	< 2.5	10	< 2.5	10	< 2.5	10	< 1	
PNR-21	10/11/2012	11:50	< 2.5	10	< 2.5	10	< 2.5	10	< 2.5	10	< 1	
PNR-21	05/08/2013	15:13	< 2.5	10	< 2.5	10	< 2.5	10	< 2.5	10	1	
PNR-21	09/26/2013	9:11	< 2.5		< 2.5		< 2.5		< 2.5		< 1	
PNR-22	08/08/2001	17:10	< 0.5		< 0.5		< 0.5		< 1.0		< 0.5	
PNR-22	08/16/2001	11:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	11/07/2001	9:10	< 0.5		< 0.5		< 0.5		< 1.0		< 0.5	
PNR-22	02/20/2002	14:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	05/21/2002	12:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	08/20/2002	15:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	11/05/2002	12:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	03/04/2003	15:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	05/13/2003	12:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	08/13/2003	9:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	11/05/2003	12:25	1.2		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	06/08/2004	16:10	< 0.5		< 0.5		< 0.5		1.20		< 0.5	
PNR-22	09/15/2004	8:50	< 0.5		< 0.5		0.62		< 0.5		< 0.5	
PNR-22	11/18/2004	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	03/01/2005	11:00	< 0.5		< 0.5		0.51		< 0.5		< 0.5	
PNR-22	05/24/2005	10:07	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	08/16/2005	9:30	< 0.5		< 0.5		0.57		0.54		< 0.5	
PNR-22	11/15/2005	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	02/07/2006	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	05/23/2006	13:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	08/22/2006	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	12/06/2006	9:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	03/13/2007	15:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	10/03/2007	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	03/26/2008	17:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	
PNR-22	10/22/2008	18:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-22	04/18/2009	13:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-22	10/02/2009	12:25	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-22	04/13/2010	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-22	09/18/2010	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-22	05/05/2011	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-23	08/09/2001	17:30	58		94		17		49		< 0.1	
PNR-23	08/14/2001	10:30	195		338		68		189		< 0.1	
PNR-23	11/08/2001	13:15	215		269		51		127		56.2	
PNR-23	02/21/2002	12:25	220		224		27		84		11.0	
PNR-23	05/23/2002	11:15	417		575		78		245		3.6	
PNR-23	08/21/2002	12:55	465		666		92		283		1.4	
PNR-23	11/06/2002	12:15	401		573		70		219		0.6	
PNR-23	03/05/2003	11:20	419		664		90		271		0.7	
PNR-23	05/28/2003	14:40	433		759		137		413		1.5	
PNR-23	08/14/2003	8:43	161		236		38		112		0.6	
PNR-23	11/06/2003	10:10	357		700		143		399		2.1	
PNR-23	03/17/2004	11:40	288		277		94		203		0.8	
PNR-23	06/09/2004	14:10	331		73		116		179		0.6	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-23	09/15/2004	17:40	200		74		9.3		103		0.8	
PNR-23	11/18/2004	11:00	268		115		8.8		166		0.7	
PNR-23	03/02/2005	11:35	199		77		5.6		99		< 0.1	
PNR-23	05/25/2005	13:00	126		56		3.5		62		< 0.1	
PNR-23	08/17/2005	15:20	114		42		4.2		44		2.8	
PNR-23	11/16/2005	12:15	121		2.6		41		31		0.2	
PNR-23	02/09/2006	16:00	100		3.4		31		14		< 0.1	
PNR-23	05/25/2006	11:15	83		1.7		16		5.9		< 0.1	
PNR-23	08/24/2006	10:18	101		1.6		7.7		2.1		0.4	
PNR-23	12/08/2006	10:10	88		1.7		4.7		1.7		< 0.1	
PNR-23	03/14/2007	15:00	74		1.5		4.5		1.7		< 0.1	
PNR-23	10/05/2007	12:30	53		< 0.5		2.7		< 0.5		< 0.1	
PNR-23	03/27/2008	16:05	12		< 0.5		0.48	7	< 0.5		< 0.1	
PNR-23	10/27/2008	14:56	0.84		< 0.5		1		0.47	7	< 1.0	
PNR-23	04/16/2009	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-23	10/02/2009	12:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-23	04/15/2010	15:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-23	09/21/2010	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-23	05/05/2011	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-23	09/23/2011	10:43	0.23	7	< 1.0		< 1.0		< 1.0		< 5	
PNR-23	05/17/2012	12:42	0.24	7	0.25	7	< 1.0		0.27	7	< 1	
PNR-23	10/25/2012	9:20	0.24	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-23	05/08/2013	17:09	< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-23	09/26/2013	11:49	0.40	7	0.32	7	< 1.0		< 1.0		< 1	
PNR-24	08/14/2001	12:00	195		320		66		198		74.6	
PNR-24	08/14/2001	18:20	346		594		123		344		970.0	
PNR-24	11/08/2001	13:40	422		601		102		316		49.7	
PNR-24	02/21/2002	13:55	569		974		198		623		110.0	
PNR-24	05/23/2002	11:50	294		633		117		455		29.0	
PNR-24	08/21/2002	13:10	321		653		110		392		360.0	
PNR-24	11/06/2002	12:32	292		543		77		286		170.0	
PNR-24	03/05/2003	11:40	358		783		131		472		160.0	
PNR-24	05/28/2003	14:50	150		290		65		257		36.0	
PNR-24	08/14/2003	13:08	149		347		72		283		53.0	
PNR-24	11/06/2003	11:00	234		501		78		296		84.0	
PNR-24	03/17/2004	12:10	125		265		57		204		44.0	
PNR-24	06/09/2004	14:20	157		343		60		233		82.0	
PNR-24	09/15/2004	18:05	170		109		484		349		130.0	
PNR-24	11/18/2004	11:05	128		88		317		271		97.0	
PNR-24	03/02/2005	13:25	88		51		85		80		76.0	
PNR-24	05/25/2005	13:45	50		42		76		59		47.0	
PNR-24	08/17/2005	16:05	28		39		68		61		180.0	
PNR-24	11/16/2005	16:15	18		137		43		70		450.0	
PNR-24	02/08/2006	13:30	7.7		92		54		107		28.0	
PNR-24	05/24/2006	12:55	2.1		42		26		65		26.0	
PNR-24	08/24/2006	11:22	3.7		31		30		61		43.0	
PNR-24	12/08/2006	10:50	2.8		54		66		104		28.0	
PNR-24	03/14/2007	15:40	1.8		26		46		74		3.0	
PNR-24	05/17/2012	13:18	0.31	7	0.27	7	5.6		7.2		2	
PNR-24	10/25/2012	10:03	0.31	7	0.15	7	11		5.1		3	
PNR-24	06/11/2013	9:23	0.13	7	< 1.0		< 1.0		0.51	7	2	
PNR-24 Dup	06/11/2013	9:23	0.13	7	< 1.0		< 1.0		0.53	7	2	
PNR-24	09/26/2013	12:43	0.76	7	0.37	7	< 1.0		0.81	7	1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-25	08/14/2001	13:15	164		161		18.0		156	3	93.1	
PNR-25	08/14/2001	19:05	216		224		32.0		266		156.0	
PNR-25	11/08/2001	10:15	229		219		22.0		237		0.1	
PNR-25	02/21/2002	15:30	225		541		121.0		495		75.0	
PNR-25	05/22/2002	16:50	147		497		104.0		624		100.0	
PNR-25	08/21/2002	14:40	6.2		48		7.8		233		500.0	
PNR-25	11/06/2002	14:55	1.7		2.1		2.2		337		390.0	
PNR-25	03/05/2003	12:45	2.7		9.0		12.0		286		140.0	
PNR-25	05/28/2003	15:25	2.7		20		36.0		260		58.0	
PNR-25	08/14/2003	10:00	2.2		12		24.0		152		96.0	
PNR-25	11/05/2003	15:15	3.5		9.2		30.0		184		41.0	
PNR-25	03/17/2004	14:15	1.3		13		79.0		212		130.0	
PNR-25	06/08/2004	13:00	1.2		18		98.0		252		81.0	
PNR-25	09/15/2004	16:45	2.3		80		8.1		203		160.0	
PNR-25	11/18/2004	9:00	1.4		84		6.2		210		75.0	
PNR-25	03/02/2005	13:00	5.5		133		20.0		295		80.0	
PNR-25	05/25/2005	11:15	2.6		82		14.0		205		21.0	
PNR-25	08/17/2005	18:20	1.0		28		6.3		65		21.0	
PNR-25	11/16/2005	13:25	3.2		37		259.0		564		660.0	
PNR-25	02/08/2006	11:15	< 5		36		193.0		495		210.0	
PNR-25	05/24/2006	11:45	4.0		63		163.0		339		370.0	
PNR-25	08/24/2006	12:00	7.9		104		249.0		472		900.0	
PNR-25	12/08/2006	11:30	8.9		97		191.0		346		510.0	
PNR-25	03/15/2007	10:53	11		125		269		707		300.0	
PNR-26	08/14/2001	18:00	124		270		80		232		2490.0	
PNR-26	08/22/2001	10:00	188		404		105		336		55.4	
PNR-26	11/08/2001	14:15	365		1920		908		2590		1160.0	
PNR-26	02/21/2002	16:00	514		1140		225		636		76.0	
PNR-26	05/23/2002	11:15	365		998		200		610		150.0	
PNR-26	08/21/2002	16:00	328		632		116		377		220.0	
PNR-26	11/06/2002	16:20	398		685		91		335		66.0	
PNR-26	03/05/2003	14:00	333		1090		237		884		400.0	
PNR-26	05/28/2003	16:35	447		912		179		666		80.0	
PNR-26	08/14/2003	10:45	319		946		206		725		250.0	
PNR-26	11/06/2003	12:30	462		1270		256		845		32.0	
PNR-26	03/17/2004	14:15	364		1030		200		670		46.0	
PNR-26	06/09/2004	16:00	450		1260		211		703		16.0	
PNR-26	09/16/2004	9:50	278		177		946		576		250.0	
PNR-26	11/18/2004	12:25	282		224		915		810		59.0	
PNR-26	03/02/2005	16:10	435		300		1290		946		270.0	
PNR-26	05/25/2005	15:15	264		339		1140		1250		78.0	
PNR-26	08/17/2005	18:00	292		223		1030		857		540.0	
PNR-26	11/16/2005	14:55	427		1550		458		1710		410.0	
PNR-26	02/08/2006	15:10	326		1170		278		991		220.0	
PNR-26	05/24/2006	14:10	118		313		75		240		20,000.0	13
PNR-27	08/21/2001	15:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	09/05/2001	15:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	11/06/2001	15:30	< 0.5		< 0.5		< 0.5		< 1.0		0.4	
PNR-27	02/20/2002	17:02	< 0.5		< 0.5		< 0.5		< 0.5		1.0	
PNR-27	05/21/2002	18:12	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	08/20/2002	19:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-27	11/06/2002	9:55	0.49	7	< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	03/05/2003	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	05/28/2003	11:00	0.42		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	08/13/2003	13:35	0.81		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	11/05/2003	11:45	0.66		1.0		< 0.5		< 0.5		< 0.1	
PNR-27	06/08/2004	11:50	1.3		0.43		< 0.5		0.57		< 0.1	
PNR-27	09/14/2004	13:05	1.2		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	11/17/2004	10:38	1.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	03/01/2005	15:33	1.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	05/24/2005	15:33	1.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	08/16/2005	17:08	1.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	11/15/2005	16:35	1.6		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	02/08/2006	17:10	1.6		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	05/23/2006	16:57	1.6		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	08/23/2006	15:01	1.6		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	12/07/2006	14:15	2.0		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	03/14/2007	16:50	2.1		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-27	10/03/2007	12:50	1.7		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	03/27/2008	17:10	2.3		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-27	10/25/2008	14:45	2.6		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-27	04/19/2009	12:50	2.6		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-27	10/06/2009	11:40	1.7		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-27	04/19/2010	9:45	1.6		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-27	09/21/2010	13:25	1.6		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-27	05/04/2011	16:10	1.1		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-28	08/21/2001	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	09/05/2001	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	11/06/2001	14:40	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
PNR-28	02/20/2002	16:30	< 0.5		< 0.5		< 0.5		< 0.5		1.2	
PNR-28	05/21/2002	17:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	08/20/2002	18:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	11/05/2002	13:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	03/05/2003	10:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	05/28/2003	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	08/13/2003	13:00	0.51		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	11/05/2003	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	06/08/2004	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	09/15/2004	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	11/17/2004	9:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	03/01/2005	14:39	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	05/25/2005	11:07	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	08/16/2005	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	11/15/2005	11:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	02/08/2006	14:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	05/23/2006	13:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	08/23/2006	12:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	12/06/2006	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	03/13/2007	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	10/04/2007	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	03/26/2008	18:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-28	10/25/2008	13:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-28	04/19/2009	11:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-28	10/07/2009	10:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-28	04/16/2010	16:25	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-28	09/21/2010	12:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-28	05/05/2011	17:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-29	08/21/2001	17:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	09/05/2001	14:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	11/06/2001	12:50	< 0.5		0.69		< 0.5		< 1.0		< 0.1	
PNR-29	02/20/2002	13:03	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	05/21/2002	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	08/20/2002	11:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	11/05/2002	12:42	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	03/05/2003	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	05/28/2003	10:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	08/13/2003	13:08	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	11/04/2003	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	06/08/2004	10:45	< 0.5		0.59		< 0.5		0.53		< 0.1	
PNR-29	09/15/2004	9:40	< 0.5		< 0.5		0.52		< 0.5		< 0.1	
PNR-29	11/17/2004	9:31	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	03/01/2005	13:36	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	05/25/2005	9:46	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	08/16/2005	14:48	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	11/15/2005	10:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	02/08/2006	16:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	05/23/2006	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	08/23/2006	11:37	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	12/06/2006	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	03/13/2007	17:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	10/02/2007	18:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	03/26/2008	12:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-29	10/25/2008	12:55	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-29	04/21/2009	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-29	10/03/2009	15:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-29	04/14/2010	11:55	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-29	09/18/2010	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-29	05/04/2011	13:50	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-33-06	10/24/2006	16:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-33-06	12/06/2006	11:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-33-06	03/13/2007	13:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-33-06	10/03/2007	15:35	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-33-06	03/26/2008	0:00	< 0.5		< 0.5		< 0.5		1.4		< 0.1	
PNR-33-06	10/23/2008	11:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-33-06	04/17/2009	17:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-33-06	10/04/2009	13:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-33-06	04/14/2010	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-33-06	09/21/2010	12:18	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-33-06	05/04/2011	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-34-07	03/14/2007	13:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-34-07	10/05/2007	15:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-34-07	03/27/2008	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-34-07	10/25/2008	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-34-07	04/22/2009	16:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-34-07	10/06/2009	15:55	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data
PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
PNR-34-07	04/16/2010	12:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-34-07	09/21/2010	16:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-34-07	05/04/2011	15:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-35-07	03/13/2007	11:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-35-07	10/02/2007	16:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-35-07	03/26/2008	10:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-35-07	10/22/2008	17:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-35-07	04/20/2009	18:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-35-07	10/03/2009	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-35-07	04/14/2010	14:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-35-07	09/18/2010	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-35-07	05/04/2011	15:45	< 0.5		< 0.5		< 0.5		< 0.5		1.1	
PNR-36-07	03/13/2007	11:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
PNR-36-07	10/03/2007	16:50	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-36-07	03/26/2008	0:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-36-07	10/23/2008	15:25	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-36-07	04/21/2009	14:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-36-07	10/02/2009	16:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-36-07	04/14/2010	12:20	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-36-07	09/17/2010	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-36-07	05/04/2011	10:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-38-08	03/26/2008	18:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-38-08	10/23/2008	13:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-38-08	04/21/2009	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-38-08	10/03/2009	17:10	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-38-08	04/14/2010	17:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-38-08	09/20/2010	13:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-38-08	05/04/2011	13:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-39-08	06/28/2008	14:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
PNR-39-08	10/23/2008	18:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-39-08	04/22/2009	14:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-39-08	10/04/2009	14:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-39-08	04/16/2010	11:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-39-08	09/21/2010	15:45	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
PNR-39-08	05/04/2011	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS06-1	01/10/2008	12:53	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS06-1	04/17/2009	17:15	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS06-2	04/18/2009	13:50	< 0.5		< 0.5		< 0.5		< 0.5		7.3	
USGS06-7	10/04/2007	17:50	< 0.5		< 0.5		0.75		< 0.5		< 0.1	
USGS06-7	11/14/2007	16:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS06-8	04/19/2009	13:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS06-11	04/20/2009	17:35	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-6	04/16/2009	16:13	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
USGS92-7	04/15/2009	15:40	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-9	04/15/2009	17:02	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-12	06/01/2000	0:00	< 0.5		< 0.5		< 0.5		< 0.5		-	
USGS92-12	08/07/2001	11:35	< 0.5		< 0.5		< 0.5		< 1.0		< 0.1	
USGS92-12	08/15/2001	14:40	< 0.5		0.36	7	< 0.5		0.29	7	0.7	
USGS92-12	11/06/2001	14:30	< 0.5		< 0.5	7	< 0.5		< 1.0		2.9	
USGS92-12	02/20/2002	14:25	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	05/21/2002	14:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	08/19/2002	16:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	11/05/2002	12:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	03/04/2003	11:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	05/13/2003	14:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	08/13/2003	7:48	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	11/05/2003	10:00	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	06/08/2004	9:15	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	09/14/2004	11:08	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	11/16/2004	9:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	03/01/2005	12:40	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	05/24/2005	10:43	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	08/17/2005	9:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	11/15/2005	14:41	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	02/07/2006	15:32	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	05/24/2006	10:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	08/22/2006	11:45	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	12/06/2006	10:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	03/13/2007	12:55	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	8
USGS92-12	10/02/2007	17:10	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	03/25/2008	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS92-12	10/22/2008	17:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-12	04/17/2009	12:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-12	10/02/2009	16:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-12	04/13/2010	14:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-12	09/16/2010	14:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS92-12	05/03/2011	15:30	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-3	06/01/2000	0:00	4.4		< 0.5		< 0.5		< 0.5		-	
USGS93-3	08/07/2001	18:55	3.0		< 0.5		< 0.5		< 1.0		< 0.1	
USGS93-3	08/15/2001	19:10	3.4		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	11/07/2001	10:05	3.0		< 0.5		< 0.5		< 1.0	7	0.3	
USGS93-3	02/20/2002	9:00	2.7		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	05/22/2002	9:30	2.5		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	08/20/2002	16:25	3.0		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	11/05/2002	16:10	3.8		0.5	7	< 0.5		< 0.5		< 0.1	
USGS93-3	03/04/2003	15:45	3.4		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	05/28/2003	13:15	2.9		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	08/14/2003	14:08	2.6		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	11/04/2003	16:45	2.4		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	06/08/2004	19:05	3.1		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	09/14/2004	16:25	2.1		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	11/17/2004	12:15	2.3		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	03/02/2005	11:05	2.0		< 0.5		< 0.5		< 0.5		1.1	
USGS93-3	05/25/2005	15:52	2.1		< 0.5		< 0.5		< 0.5		< 0.1	

Table 3. Monitoring Well Network BTEX and TPH Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Site ID	Date	Time	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydrocarbons mg/L	TPH foot-note
USGS93-3	08/17/2005	12:55	1.9		1.9		< 0.5		< 0.5		< 0.1	
USGS93-3	11/16/2005	16:40	1.9		< 0.5		1.9		< 0.5		0.8	
USGS93-3	02/09/2006	15:20	1.4		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	05/24/2006	18:20	1.6		0.5	7	< 0.5		< 0.5		< 0.1	
USGS93-3	08/23/2006	14:50	1.7		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	12/07/2006	12:05	1.7		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	03/15/2007	13:30	1.9		< 0.5		< 0.5		< 0.5		< 0.1	8
USGS93-3	10/03/2007	11:50	1.4		< 0.5		< 0.5		< 0.5		< 0.1	
USGS93-3	03/27/2008	11:15	2.2		< 0.5		< 0.5		0.51		< 0.1	
USGS93-3	10/26/2008	11:45	3.9		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-3	04/15/2009	15:00	4.2		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-3	10/01/2009	14:00	2.2		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-3	04/15/2010	11:55	2.6		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-3	09/16/2010	10:25	2.0		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-3	05/10/2011	12:40	1.4		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-4A	04/18/2009	17:05	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
USGS93-5	04/17/2009	15:00	< 0.5		< 0.5		< 0.5		< 0.5		< 1.0	
M-60 (city)	05/26/2005	10:20	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	
Lockman (city)	05/26/2005	11:05	< 0.5		< 0.5		< 0.5		< 0.5		< 0.1	

Footnotes:

1 RL - Analyte reporting limit.
2 QCL - Quality control limit.
3 D - RL increased due to sample matrix interference
4 MCL - Maximum contaminant level.
5 ND - Not detected at the reporting limit.
6 E - Estimated value. Result exceeds lab intstrument upper quantitation limit.
7 J - Estimated value. The analyte was present but less than the reporting limit.
8 H - Analysis performed past recommended holding time.
9 PH - At time of analysis sample pH was <4.5, unable to analyze for Alkalinity
10 F - The reporting limit reflects a 5 times dilution. The sample was diluted due to foaming.
11 MNW - Meter failure, reading recording in field notes, but not used.
12 OR- Over range of meter, SC>2.0mS/cm.
13 V - Value questionable compared to other samples at this site. No rerun value available. Value not used in interpretations for this report.
14 DL - Data logger deployed. Additional data available for this site.

Table 4 - Brine Recovery Well Network Chloride and BTEX Analytical Data

Pioneer Natural Resources USA, Inc. - Mesa-Biere #1-22 Groundwater Investigation

Geosyntec Project No.: PNR0522

Last Update: 12/3/2013

Well ID	Date	Time	Field SC mS/cm	SC foot-note	Field Temp. °C	T foot-note	Field D.O. mg/L	DO foot-note	Field pH S.U.	pH foot-note	Field TDS mg/L	TDS foot-note	Field ORP mV	ORP foot-note	Chloride mg/L	Cl foot-note	Total Dis-solved Solids mg/L	T25S foot-note	Specific Conduct-ance at 25°C mS/cm	SC foot-note	Lab-oratory pH S.U.	pH foot-not	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydro-carbons mg/L	TPH foot-note
PNR-RW-01	01/09/2008	14:33	-		-		-		-		-		-		28,000		-		71.2				19		< 0.50		< 0.50		< 0.50		-	
PNR-RW-01	10/05/2009	15:10	-		-		-		-		-		-		25,600	3	29,400		55.4	6	6.9		19		< 0.50		< 0.50		< 0.50		-	
PNR-RW-01	04/14/2010	10:00	-		-		-		-		-		-		25,400		-		52.9	6	6.9		17		< 0.50		< 0.50		< 0.50		-	
PNR-RW-01	09/17/2010	13:35	-		-		-		-		-		-		22,600	3	-		54.1	6	-		17		< 0.50		< 0.50		< 0.50		-	
PNR-RW-01	09/22/2011	10:05	49.35		-		-		6.50		-		-		17,900	3	30,100		-		-		11		< 1.0		< 1.0		< 1.0		< 5	
PNR-RW-01	05/15/2012	15:19	40.24		10.00		0.42		6.90		26,150		-		15,400	3	25,400		-		-		8.2		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-01	10/10/2012	12:45	37.88		10.20		0.78		6.79		24,610		-		16,400	3	24,800		-		-		6.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-01	05/10/2013	12:30	36.09		7.41		2.31		6.67		23,470		107.7		11,900	3	24,800		-		-		6.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-01	09/27/2013	12:10	29.75		9.43		0.23		6.85		19,320		13.3		9,850	3	28,700		-		-		3.5		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-02	01/09/2008	12:20	-		-		-		-		-		-		22,400		-		59.7				13		< 0.50		< 0.50		< 0.50		-	
PNR-RW-02	04/22/2009	19:20	49.56		9.54		1.71		6.59		-		-		17,500	3	-		48.5		6.9		14		< 0.50		< 0.50		< 0.50		-	
PNR-RW-02	10/05/2009	15:20	-		-		-		-		-		-		22,900	3	32,200		50.4	6	7.0		16		< 0.50		< 0.50		< 0.50		-	
PNR-RW-02	04/14/2010	10:30	-		-		-		-		-		-		22,400	3	-		47.9	6	6.9		15		< 0.50		< 0.50		< 0.50		-	
PNR-RW-02	09/17/2010	14:00	-		-		-		-		-		-		18,500	3	-		45.6	6	-		15		< 0.50		< 0.50		< 0.50		-	
PNR-RW-02	09/22/2011	10:25	44.2		-		-		6.50		-		-		15,600	3	26,700		-		-		10		< 1.0		< 1.0		< 1.0		< 5	
PNR-RW-02	05/15/2012	15:01	38.92		9.67		0.90		6.91		25,330		-		14,900	3	24,800		-		-		9.3		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-02	10/10/2012	12:26	35.58		9.48		1.23		6.78		23,000		-		13,800	3	23,800		-		-		7.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-02	05/10/2013	13:35	36.03		7.56		2.63		6.67		23,410		109.1		12,300	3	23,300		-		-		4.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-02	09/27/2013	11:11	31.19		9.44		0.58		6.78		20,280		17.6		10,700	3	30,500		-		-		3.7		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-03	01/08/2008	16:08	-		-		-		-		-		-		31,800		-		76.8		-		23		< 0.50		< 0.50		0.49	7	-	
PNR-RW-03	04/22/2009	19:05	59.64		10.67		1.23		6.44		-		-		22,000	3	-		58.5		6.8		12		< 0.50		< 0.50		< 0.50		-	
PNR-RW-03	10/14/2009	14:10	-		-		-		-		-		-		31,200	3	-		-		-		16		< 0.50		< 0.50		< 0.50		-	
PNR-RW-03	04/16/2010	9:20	-		-		-		-		-		-		36,400	3	-		67.9	6	6.7		18		< 0.50		< 0.50		< 0.50		-	
PNR-RW-03	09/17/2010	14:10	-		-		-		-		-		-		11,200	3	-		29.4	6	-		18		< 0.50		< 0.50		< 0.50		-	
PNR-RW-03	05/06/2011	11:45	-		-		-		-		-		-		24,100		-		52.8	6	6.8		12		< 0.50		< 0.50		< 0.50		-	
PNR-RW-03	09/22/2011	10:40	52.8						6.80		-		-		21,100	3	34,400		-		-		9.9		< 1.0		< 1.0		< 1.0		< 5	
PNR-RW-03	05/15/2012	14:29	43.8		9.88		2.06		6.77		28,460		-		16,800	3	28,900		-		-		7.1		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-03	10/10/2012	12:14	44.93		10.27		0.35		6.70		29,180		-		18,300	3	31,200		-		-		8.1		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-03	05/10/2013	13:52	45.36		8.49		2.11		6.55		29,450		104.6		15,400	3	29,500		-		-		4.7		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-03	09/27/2013	10:52	36.89		9.14		0.17		6.63		24,000		32.3		13,000	3	38,500		-		-		3.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-04	01/08/2008	14:10	-		-		-		-		-		-		24,400		-		63.6		-		20.0		< 0.50		< 0.50		< 0.50	7	-	
PNR-RW-04	04/22/2009	18:55	55.23		9.66		1.05		6.51		-		-		19,700	3	-		53.6		6.9		14		< 0.50		< 0.50		< 0.50		-	
PNR-RW-04	10/05/2009	15:30	-		-		-		-		-		-		23,500	3	24,500		50.3	6	6.9		11.0		< 0.50		< 0.50		< 0.50		-	
PNR-RW-04	04/14/2010	11:00	-		-		-		-		-		-		21,500	3	-		46.8	6	6.9		8.6		< 0.50		< 0.50		< 0.50		-	
PNR-RW-04	09/17/2010	14:20	-		-		-		-		-		-		14,700	3	-		37.9	6	-		5.9		< 0.50		< 0.50		< 0.50		-	
PNR-RW-04	05/06/2011	13:54	-		-		-		-		-		-		12,700	3	-		30.9	6	7.0		2.7		< 0.50		< 0.50		< 0.50		-	
PNR-RW-04	09/22/2011	11:20	33.6		-		-		6.60		-		-		11,400	3	18,000		-		-		2.0		< 1.0		< 1.0		< 1.0		< 5	
PNR-RW-04	05/15/2012	13:20	27.40		10.06		2.45		6.92		17,810		-		9,200	3	15,500		-		-		1.7		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-04	10/10/2012	10:58	26.41		9.35		0.78		6.54		17,220		-		9,190	3	17,400		-		-		2.4		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-04	05/10/2013	11:30	25.70		7.27		3.45		6.67		16,710		88.6		7,650	3	15,700		-		-		1.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-04	09/27/2013	10:36	21.72		9.34		0.13		6.80		14,140		28.2		6,670	3	14,000		-		-		1.5		< 1.0		< 1.0		< 1.0		< 1	

Table 4. Brine Recovery Well Network Chloride and BTEX Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Well ID	Date	Time	Field SC mS/cm	SC foot-note	Field Temp. °C	T foot-note	Field D.O. mg/L	DO foot-note	Field pH S.U.	pH foot-note	Field TDS mg/L	TDS foot-note	Field ORP mV	ORP foot-note	Chloride mg/L	Cl foot-note	Total Dis-solved Solids mg/L	T25S foot-note	Specific Conduct-ance at 25°C mS/cm	SC foot-note	Lab-oratory pH S.U.	pH foot-not	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydro-carbons mg/L	TPH foot-note
PNR-RW-05	01/08/2008	11:47	-		-		-		-		-		-		15,000		-		42.4				5.0		< 0.50		< 0.50		< 0.50	7	-	
PNR-RW-05	04/22/2009	18:40	45.37		9.76		0.42		6.41		-		-		15,800	3	-		44.0		6.7		6.2		< 0.50		< 0.50		< 0.50		-	
PNR-RW-05	10/05/2009	15:45	-		-		-		-		-		-		18,000	3	17,000		41.7		6.8		5.4		< 0.50		< 0.50		< 0.50		-	
PNR-RW-05	04/14/2010	11:15	-		-		-		-		-		-		15,200	3	-		36.6	6	6.8		4.7		< 0.50		< 0.50		< 0.50		-	
PNR-RW-05	09/17/2010	14:30	-		-		-		-		-		-		12,300	3	-		32.4	6			3.5		< 0.50		< 0.50		< 0.50		-	
PNR-RW-05	05/06/2011	14:09	-		-		-		6.80		-		-		10,900	3	-		27.3	6			2.2		< 0.50		< 0.50		< 0.50		-	
PNR-RW-05	09/22/2011	11:35	28.7		-		-		6.60		-		-		9,120	3	17,300		-		-		2.4		< 1.0		< 1.0		< 1.0		< 5	
PNR-RW-05	05/15/2012	13:44	23.80		9.80		0.89		6.84		15,440		-		8,020	3	13,100		-		-		2.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-05	10/10/2012	11:20	20.03		9.37		0.58		6.80		13,010		-		6,790	3	13,200		-		-		1.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-05	05/10/2013	11:12	20.98		7.32		2.73		6.64		13,630		67.7		6,230	3	13,300		-		-		1.6		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-05	09/27/2013	10:17	13.46		14.52	11	0.13		6.88		8,750		20.3		3,450	3	8,950		-		-		0.15	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-6	04/22/2009	17:00	52.23		5.41		-		6.42		-		-		18,800	3	-		50.7		6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-06	04/19/2010	14:40	-		-		-		-		-		-		21,500	3	-		46.4		6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-06	09/17/2010	14:45	-		-		-		-		-		-		19,200	3	-		46.2	6	-		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-06	05/06/2011	11:20	-		-		-		-		-		-		18,600	3	-		40.5	6	6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-06	09/22/2011	13:30	39.5		-		-		6.40		-		-		13,800	3	25,900		-		-		< 1.0		< 1.0		< 1.0		< 1.0		-	
PNR-RW-06	12/28/2011	14:55	34.81		8.93		-		6.69		22,810		-		11,700	3	20,000		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-06	05/15/2012	10:57	30.59		10.65		2.41		6.89		18,880		-		10,800	3	19,900		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-06	10/10/2012	9:20	27.65		9.36		4.77		6.17		17,980		-		8,560	3	19,800		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-06	05/10/2013	9:53	25.53		7.31		8.08		6.35		16,590		213.1		8,080	3	17,200		-		-		-		-		-		-		-	
PNR-RW-06	09/27/2013	9:12	22.25		9.30		4.69		6.61		14,460		27.0		7,290	3	15,200		-		-		-		-		-		-		-	
PNR-RW-07A	04/22/2009	17:15	48.96		-		-		6.57		-		-		17,900	3	-		47.0		6.7		< 0.50		0.61		< 0.50		< 0.50		-	
PNR-RW-07A	10/05/2009	14:15	-		-		-		-		-		-		20,400	3	28,900		47.5	6	6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-07A	04/16/2010	10:30	-		-		-		-		-		-		23,100	3	-		45.3	6	6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-07A	09/22/2010	16:00	38.33		9.75		1.29		6.57		-		-		17,700	3	-		42.5	6	-		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-08	04/22/2009	16:45	51.59		9.72		6.60		6.59		-		-		18,900	3	-		50.3		6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-08	10/05/2009	14:30	-		-		-		-		-		-		23,300	3	29,700		49.9	6	6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-08	04/19/2010	14:10	-		-		-		-		-		-		22,700	3	-		50.1	6	6.9		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-08	12/28/2011	14:30	34.52		8.64		-		6.55		22,430		-		11,400	3	19,600		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-08	05/15/2012	10:40	29.24		9.89		5.11		6.82		19,010		-		10,100	3	18,300		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-08	10/10/2012	8:55	26.57		8.86		4.22		6.00		17,270		-		9,600	3	19,400		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-08	05/10/2013	10:27	26.93		11.32		4.86		6.45		17,570		197.8		8,610	3	21,200		-		-		-		-		-		-		-	
PNR-RW-08 Dup	05/10/2013	10:27	-		-		-		-		-		-		8,680	3	19,000		-		-		-		-		-		-		-	
PNR-RW-08	09/27/2013	9:32	25.50		14.04		0.13		6.72		16,580		17.5		8,710	3	17,600		-		-		-		-		-		-		-	
PNR-RW-09	04/22/2009	17:45	59.63		23.21		0.24		6.79		-		-		21,800	3	-		58.6		7.0		1.9		< 0.50		5.1		0.99	7	-	
PNR-RW-09	10/14/2009	14:10	-		-		-		-		-		-		13,900	3	-		-		-		1.4		< 0.50		8.5		3.3		-	
PNR-RW-09	04/14/2010	12:05	-		-		-		-		-		-		16,900	3	-		41.8	6	7.1		0.91		< 0.50		6.9		6.6		-	
PNR-RW-09	09/17/2010	15:20	-		-		-		-		-		-		12,300	3	-		33.3	6	-		0.91		< 0.50		8.2		3.5		-	
PNR-RW-09	05/06/2011	14:25	-		-		-		-		-		-		9,350	3	-		25.8	6	7.3		0.65		< 0.50		4.7		1.5		-	
PNR-RW-09	09/23/2011	11:30	26.9		-		-		6.80		-		-		8,650	3	15,300		-		-		0.46	7	< 0.50		2.5		1.3		< 5	
PNR-RW-09	05/15/2012	11:42	19.54		24.01		0.98		7.25		12,690		-		6,350	3	11,300		-		-		0.2	7	< 1.0		2.3		0.28	7	1	
PNR-RW-09	10/10/2012	9:50	15.84		23.12		0.20		7.08		10,290		-		5,070	3	9,640		-		-		< 1.0		< 1.0		0.66	7	< 1.0		< 1	
PNR-RW-09	05/10/2013	11:00	12.29		20.35		0.89		7.29		7995		-53.0		2,880	3	7,280		-		-		-		-		-		-		-	
PNR-RW-09	09/27/2013	9:44	-		-		-		-		-		-		2,590	3	6,920		-		-		-		-		-		-		-	
PNR-RW-10	04/22/2009	18:00	7.050		27.85		0.16		8.51		-		-		871	3	-		6.80		8.6		13		42		19		49		-	

Table 4. Brine Recovery Well Network Chloride and BTEX Analytical Data

PNR Mesa-Biere #1-22 Groundwater Investigation

Well ID	Date	Time	Field SC mS/cm	SC foot-note	Field Temp. °C	T foot-note	Field D.O. mg/L	DO foot-note	Field pH S.U.	pH foot-note	Field TDS mg/L	TDS foot-note	Field ORP mV	ORP foot-note	Chloride mg/L	Cl foot-note	Total Dis-solved Solids mg/L	T25S foot-note	Specific Conduct-ance at 25°C mS/cm	SC foot-note	Lab-oratory pH S.U.	pH foot-not	Benzene µg/l	B foot-note	Toluene µg/l	T foot-note	Ethylben-zene µg/l	E foot-note	Total Xylenes µg/l	X foot-note	Total Petroleum Hydro-carbons mg/L	TPH foot-note
PNR-RW-10	10/05/2009	14:50	-		-		-		-		-		-		914	3	4,410		6.68		8.6		12		62		30		96		-	
PNR-RW-10	04/14/2010	11:50	-		-		-		-		-		-		641	3	-		5.87		8.5		10		39		23		61		-	
PNR-RW-10	09/21/2010	10:00	-		-		-		-		-		-		315	3	-		4.85	6	-		39		139		78		212		-	
PNR-RW-10	05/06/2011	14:42	-		-		-		-		-		-		436	3	-		5.03		8.0		6.8		28		33		69		-	
PNR-RW-10	05/15/2012	14:07	9.73		19.85		0.82		7.93		3,077		-		343	3	3,260		-		-		6.3		22		44		59		50	
PNR-RW-10	10/10/2012	15:40	4.434		14.27		2.39		7.43		2,883		32.4		281	3	3,380		-		-		16		188		167		497		650	
PNR-RW-10 Dup	10/10/2012	15:40	-		-		-		-		-		-		278	3	3,420		-		-		17		242		211		640		730	
PNR-RW-10	05/10/2013	14:15	4.564		15.62		1.52		7.74		2,967		-129.5		235	3	3,340		-		-		6.7		35		46		97		110	
PNR-RW-10	09/27/2013	12:23	-		-		-		-		-		-		232	3	3,460		-		-		8.5		7.6		111		320		2	
PNR-RW-11	10/01/2009	10:45	-		-		-		-		-		-		36,700	3	40,000		82.6	6	6.9		12		< 0.50		< 0.50		< 0.50		< 1.0	
PNR-RW-11	04/15/2010	10:00	-		-		-		-		-		-		31,900	3	-		63.0	6	6.9		9.1		< 0.50		< 0.50		< 0.50		-	
PNR-RW-11	09/17/2010	15:10	-		-		-		-		-		-		24,700	3	-		58.3	6	-		9.9		< 0.50		< 0.50		< 0.50		-	
PNR-RW-11	05/06/2011	14:55	-		-		-		-		-		-		20,300	3	-		47.5	6	7.0		8.3		< 0.50		< 0.50		< 0.50		-	
PNR-RW-11	09/23/2011	11:13	52.3		-		-		6.60		-		-		19,100	3	31,600		-		-		8.9		< 0.50		< 0.50		< 0.50		< 5	
PNR-RW-11	05/15/2012	15:55	44.24		9.73		0.94		6.91		28,760		-		17,000	3	24,900		-		-		7.5		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-11	05/15/2012	15:55	-		-		-		-		-		-		17,200	3	27,800		-		-		7.4		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-11	10/10/2012	11:55	39.67		8.75		0.33		6.75		25,790		-		16,100	3	25,900		-		-		6.9		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-11	05/10/2013	12:57	36.77		7.14		4.64		6.71		23,890		106.8		12,100	3	26,400		-		-		6.6		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-11 Dup	05/10/2013	12:57	-		-		-		-		-		-		12,200	3	22,700		-		-		6.7		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-11	09/27/2013	11:52	32.62		8.90		1.45		6.84		21,210		19.5		11,300	3	19,800		-		-		5.8		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-12	04/19/2010	15:05	-		-		-		-		-		-		22,000	3	-		47.4	6	6.8		0.70		< 0.50		< 0.50		< 0.50		-	
PNR-RW-12	09/17/2010	14:55	-		-		-		-		-		-		19,200	3	-		47.1	6	-		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-12	05/06/2011	11:35	-		-		-		-		-		-		18,900	3	-		42.9	6	6.8		< 0.50		< 0.50		< 0.50		< 0.50		-	
PNR-RW-12	09/22/2011	13:45	42.7		-		-		6.50		-		-		14,500	3	26,500		-		-		< 1.0		< 1.0		< 1.0		< 1.0		< 5	
PNR-RW-12	05/15/2012	11:20	37.43		9.51		0.90		6.73		24,330		-		14,100	3	27,300		-		-		0.40	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-12	10/10/2012	10:38	34.60		9.21		3.21		6.31		22,490		-		13,600	3	24,700		-		-		0.38	7	< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-12	05/13/2013	10:41	33.45		7.30		7.78		6.56		21,740		89.1		11,000	3	22,300		-		-		-		-		-		-		-	
PNR-RW-12	09/27/2013	10:01	29.22		9.23		0.66		6.68		18,990		24.6		9,950	3	31,400		-		-		-		-		-		-		-	
PNR-RW-13	05/20/2012	14:30	54.6		-		-		-	11	-		-		19,900	3	29,400		-		-		5.5		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-13	10/10/2012	11:35	40.65		9.03		0.54		6.59		26,460		-		16,900	3	26,200		-		-		6.7		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-13	05/10/2013	12:00	35.05		7.95		5.38		6.75		22,780		102.3		11,800	3	22,400		-		-		5.6		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-13	09/28/2013	8:05	28.72		9.55		0.08		7.04		18,660		20.7		9,510	3	21,600		-		-		4.2		< 1.0		< 1.0		< 1.0		< 1	
PNR-RW-13 Dup	09/28/2013	8:05	-		-		-		-		-		-		9,910	3	25,000		-		-		4.2		< 1.0		< 1.0		< 1.0		< 1	

Footnotes:

[1] RL - Analyte reporting limit.

[2] QCL - Quality control limit.

[3] D - RL increased due to sample matrix interference

[4] MCL - Maximum contaminant level.

[5] ND - Not detected at the reporting limit.

[6] E - Estimated value. Result exceeds lab intstrument upper quantitation limit.

[7] J - Estimated value. The analyte was present but less than the reporting limit.

[8] H - Analysis performed past recommended holding time.

[9] PH - At time of analysis sample pH was <4.5, unable to analyze for Alkalinity

[10] F - The reporting limit reflects a 5 times dilution. The sample was diluted due to foaming.

[11] MNW - Meter failure, reading recording in field notes, but not used.

[12] OR- Over range of meter, SC>2.0mS/cm.

[13] V - Value questionable compared to other samples at this site.
No rerun value available. Value not used in interpretations for this report.

[14] DL - Data logger deployed. Additional data available for this site.

Geosyntec consultants

APPENDIX A
Boundary Monitoring Well CTD-Diver Network Data

PNR-12 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	4.65	48.81	9.34	2051.86	Installed by MJ & CM
5/13/2013 1:00	4.64	48.79	9.33	2052.25	
5/14/2013 1:00	4.62	48.79	9.33	2052.35	
5/15/2013 1:00	4.61	48.79	9.33	2052.15	
5/16/2013 1:00	4.6	48.79	9.33	2052.18	
5/17/2013 1:00	4.6	48.79	9.33	2052.18	
5/18/2013 1:00	4.6	48.79	9.33	2052.18	
5/19/2013 1:00	4.59	48.79	9.33	2052.18	
5/20/2013 1:00	4.59	48.79	9.33	2052.12	
5/21/2013 1:00	4.58	48.79	9.33	2052.02	
5/22/2013 1:00	4.58	48.79	9.33	2052.02	
5/23/2013 1:00	4.58	48.79	9.33	2051.92	
5/24/2013 1:00	4.58	48.79	9.33	2052.15	
5/25/2013 1:00	4.58	48.79	9.33	2052.08	
5/26/2013 1:00	4.58	48.81	9.34	2052.18	
5/27/2013 1:00	4.57	48.81	9.34	2052.25	
5/28/2013 1:00	4.57	48.81	9.34	2052.45	
5/29/2013 1:00	4.57	48.81	9.34	2052.41	
5/30/2013 1:00	4.57	48.81	9.34	2052.45	
5/31/2013 1:00	4.57	48.81	9.34	2052.58	
6/1/2013 1:00	4.57	48.81	9.34	2052.02	
6/2/2013 1:00	4.57	48.81	9.34	2052.02	
6/3/2013 1:00	4.57	48.81	9.34	2052.31	
6/4/2013 1:00	4.57	48.81	9.34	2052.31	
6/5/2013 1:00	4.57	48.81	9.34	2052.15	
6/6/2013 1:00	4.57	48.81	9.34	2052.41	
6/7/2013 1:00	4.57	48.81	9.34	2052.68	
6/8/2013 1:00	4.57	48.81	9.34	2053.20	
6/9/2013 1:00	4.57	48.81	9.34	2053.27	
6/10/2013 1:00	4.57	48.81	9.34	2053.59	
6/11/2013 1:00	4.57	48.81	9.34	2053.73	
6/12/2013 1:00	4.57	48.81	9.34	2053.86	
6/13/2013 1:00	4.57	48.81	9.34	2053.99	
6/14/2013 1:00	4.57	48.81	9.34	2054.48	
6/15/2013 1:00	4.57	48.81	9.34	2054.58	
6/16/2013 1:00	4.57	48.81	9.34	2054.71	
6/17/2013 1:00	4.57	48.81	9.34	2054.71	
6/18/2013 1:00	4.57	48.81	9.34	2054.91	
6/19/2013 1:00	4.57	48.81	9.34	2055.27	
6/20/2013 1:00	4.58	48.81	9.34	2055.69	
6/21/2013 1:00	4.58	48.81	9.34	2055.40	
6/22/2013 1:00	4.58	48.81	9.34	2055.50	
6/23/2013 1:00	4.58	48.81	9.34	2055.73	
6/24/2013 1:00	4.58	48.81	9.34	2055.92	
6/25/2013 1:00	4.58	48.81	9.34	2056.15	
6/26/2013 1:00	4.59	48.81	9.34	2056.02	
6/27/2013 1:00	4.59	48.81	9.34	2055.83	
6/28/2013 1:00	4.59	48.81	9.34	2055.76	
6/29/2013 1:00	4.6	48.81	9.34	2055.83	
6/30/2013 1:00	4.6	48.81	9.34	2055.86	
7/1/2013 1:00	4.6	48.81	9.34	2055.89	
7/2/2013 1:00	4.61	48.81	9.34	2055.92	
7/3/2013 1:00	4.61	48.81	9.34	2056.19	
7/4/2013 1:00	4.62	48.81	9.34	2056.45	
7/5/2013 1:00	4.62	48.81	9.34	2056.38	
7/6/2013 1:00	4.63	48.81	9.34	2056.51	
7/7/2013 1:00	4.63	48.81	9.34	2056.32	
7/8/2013 1:00	4.64	48.81	9.34	2056.38	
7/9/2013 1:00	4.64	48.81	9.34	2056.32	
7/10/2013 1:00	4.64	48.81	9.34	2056.25	
7/11/2013 1:00	4.65	48.81	9.34	2056.55	
7/12/2013 1:00	4.65	48.81	9.34	2056.78	
7/13/2013 1:00	4.65	48.81	9.34	2056.61	
7/14/2013 1:00	4.65	48.81	9.34	2056.38	
7/15/2013 1:00	4.66	48.81	9.34	2056.51	
7/16/2013 1:00	4.66	48.81	9.34	2056.74	
7/17/2013 1:00	4.66	48.81	9.34	2056.51	
7/18/2013 1:00	4.66	48.81	9.34	2056.81	

PNR-12 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	4.67	48.81	9.34	2056.81	
7/20/2013 1:00	4.66	48.83	9.35	2056.81	
7/21/2013 1:00	4.68	48.81	9.34	2057.04	
7/22/2013 1:00	4.68	48.81	9.34	2056.97	
7/23/2013 1:00	4.68	48.81	9.34	2056.87	
7/24/2013 1:00	4.67	48.83	9.35	2056.78	
7/25/2013 1:00	4.68	48.83	9.35	2056.81	
7/26/2013 1:00	4.68	48.83	9.35	2056.58	
7/27/2013 1:00	4.68	48.83	9.35	2056.61	
7/28/2013 1:00	4.69	48.81	9.34	2056.91	
7/29/2013 1:00	4.68	48.83	9.35	2056.97	
7/30/2013 1:00	4.68	48.83	9.35	2056.78	
7/31/2013 1:00	4.68	48.83	9.35	2056.65	
8/1/2013 1:00	4.68	48.83	9.35	2056.68	
8/2/2013 1:00	4.68	48.83	9.35	2056.74	
8/3/2013 1:00	4.68	48.83	9.35	2056.68	
8/4/2013 1:00	4.68	48.83	9.35	2056.74	
8/5/2013 1:00	4.68	48.83	9.35	2056.74	
8/6/2013 1:00	4.67	48.83	9.35	2056.97	
8/7/2013 1:00	4.67	48.83	9.35	2056.71	
8/8/2013 1:00	4.67	48.83	9.35	2056.61	
8/9/2013 1:00	4.67	48.83	9.35	2056.45	
8/10/2013 1:00	4.67	48.83	9.35	2056.48	
8/11/2013 1:00	4.67	48.83	9.35	2056.55	
8/12/2013 1:00	4.67	48.83	9.35	2056.48	
8/13/2013 1:00	4.66	48.83	9.35	2056.42	
8/14/2013 1:00	4.66	48.83	9.35	2056.51	
8/15/2013 1:00	4.66	48.83	9.35	2056.55	
8/16/2013 1:00	4.66	48.83	9.35	2056.61	
8/17/2013 1:00	4.66	48.83	9.35	2056.71	
8/18/2013 1:00	4.66	48.83	9.35	2056.65	
8/19/2013 1:00	4.66	48.85	9.36	2056.65	
8/20/2013 1:00	4.66	48.83	9.35	2056.74	
8/21/2013 1:00	4.66	48.85	9.36	2056.58	
8/22/2013 1:00	4.66	48.85	9.36	2056.35	
8/23/2013 1:00	4.66	48.85	9.36	2056.55	
8/24/2013 1:00	4.66	48.85	9.36	2056.74	
8/25/2013 1:00	4.65	48.85	9.36	2056.55	
8/26/2013 1:00	4.65	48.85	9.36	2056.51	
8/27/2013 1:00	4.65	48.85	9.36	2056.55	
8/28/2013 1:00	4.65	48.85	9.36	2056.38	
8/29/2013 1:00	4.65	48.85	9.36	2056.45	
8/30/2013 1:00	4.64	48.85	9.36	2056.35	
8/31/2013 1:00	4.64	48.85	9.36	2056.42	
9/1/2013 1:00	4.64	48.85	9.36	2056.19	
9/2/2013 1:00	4.64	48.85	9.36	2056.22	
9/3/2013 1:00	4.64	48.85	9.36	2056.28	
9/4/2013 1:00	4.64	48.85	9.36	2056.12	
9/5/2013 1:00	4.63	48.85	9.36	2056.15	
9/6/2013 1:00	4.63	48.85	9.36	2056.25	
9/7/2013 1:00	4.63	48.85	9.36	2056.15	
9/8/2013 1:00	4.62	48.85	9.36	2056.09	
9/9/2013 1:00	4.62	48.85	9.36	2056.32	
9/10/2013 1:00	4.62	48.85	9.36	2056.22	
9/11/2013 1:00	4.62	48.85	9.36	2055.99	
9/12/2013 1:00	4.62	48.85	9.36	2055.76	
9/13/2013 1:00	4.62	48.85	9.36	2055.96	
9/14/2013 1:00	4.62	48.85	9.36	2056.28	
9/15/2013 1:00	4.61	48.85	9.36	2055.86	
9/16/2013 1:00	4.61	48.85	9.36	2055.92	
9/17/2013 1:00	4.61	48.87	9.37	2056.28	
9/18/2013 1:00	4.61	48.87	9.37	2056.38	
9/19/2013 1:00	4.61	48.87	9.37	2056.19	
9/20/2013 1:00	4.6	48.87	9.37	2055.86	
9/21/2013 1:00	4.61	48.87	9.37	2056.09	
9/22/2013 1:00	4.61	48.87	9.37	2056.38	
9/23/2013 1:00	4.6	48.87	9.37	2056.35	

PNR-16 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	4.97	47.68	8.71	2050.41	Installed by MJ & CM
5/13/2013 1:00	4.96	47.68	8.71	2050.48	
5/14/2013 1:00	4.96	47.68	8.71	2050.45	
5/15/2013 1:00	4.95	47.68	8.71	2050.35	
5/16/2013 1:00	4.96	47.68	8.71	2050.31	
5/17/2013 1:00	4.96	47.68	8.71	2050.22	
5/18/2013 1:00	4.96	47.68	8.71	2050.18	
5/19/2013 1:00	4.96	47.68	8.71	2050.15	
5/20/2013 1:00	4.96	47.68	8.71	2050.05	
5/21/2013 1:00	4.96	47.68	8.71	2050.05	
5/22/2013 1:00	4.96	47.66	8.7	2050.05	
5/23/2013 1:00	4.96	47.68	8.71	2049.99	
5/24/2013 1:00	4.96	47.66	8.7	2050.02	
5/25/2013 1:00	4.96	47.68	8.71	2049.89	
5/26/2013 1:00	4.96	47.68	8.71	2049.86	
5/27/2013 1:00	4.97	47.66	8.7	2049.86	
5/28/2013 1:00	4.97	47.66	8.7	2050.94	
5/29/2013 1:00	4.97	47.66	8.7	2051.96	
5/30/2013 1:00	4.97	47.66	8.7	2051.69	
5/31/2013 1:00	4.96	47.66	8.7	2053.10	
6/1/2013 1:00	4.96	47.66	8.7	2052.97	
6/2/2013 1:00	4.96	47.66	8.7	2052.64	
6/3/2013 1:00	4.96	47.66	8.7	2052.41	
6/4/2013 1:00	4.96	47.66	8.7	2053.43	
6/5/2013 1:00	4.96	47.66	8.7	2052.94	
6/6/2013 1:00	4.96	47.66	8.7	2052.71	
6/7/2013 1:00	4.96	47.66	8.7	2052.38	
6/8/2013 1:00	4.96	47.66	8.7	2052.35	
6/9/2013 1:00	4.96	47.66	8.7	2052.71	
6/10/2013 1:00	4.96	47.66	8.7	2052.38	
6/11/2013 1:00	4.96	47.64	8.69	2052.18	
6/12/2013 1:00	4.97	47.66	8.7	2052.02	
6/13/2013 1:00	4.97	47.66	8.7	2051.92	
6/14/2013 1:00	4.96	47.64	8.69	2051.79	
6/15/2013 1:00	4.95	47.64	8.69	2052.81	
6/16/2013 1:00	4.94	47.64	8.69	2052.38	
6/17/2013 1:00	4.92	47.64	8.69	2052.05	
6/18/2013 1:00	4.92	47.64	8.69	2051.86	
6/19/2013 1:00	4.92	47.64	8.69	2051.69	
6/20/2013 1:00	4.92	47.64	8.69	2051.43	
6/21/2013 1:00	4.92	47.64	8.69	2051.30	
6/22/2013 1:00	4.92	47.64	8.69	2052.02	
6/23/2013 1:00	4.92	47.62	8.68	2052.32	
6/24/2013 1:00	4.92	47.62	8.68	2052.15	
6/25/2013 1:00	4.92	47.62	8.68	2051.86	
6/26/2013 1:00	4.92	47.62	8.68	2052.55	
6/27/2013 1:00	4.92	47.62	8.68	2052.12	
6/28/2013 1:00	4.92	47.62	8.68	2051.79	
6/29/2013 1:00	4.92	47.62	8.68	2051.53	
6/30/2013 1:00	4.92	47.61	8.67	2051.23	
7/1/2013 1:00	4.92	47.61	8.67	2051.04	
7/2/2013 1:00	4.92	47.61	8.67	2050.87	
7/3/2013 1:00	4.92	47.61	8.67	2050.68	
7/4/2013 1:00	4.92	47.61	8.67	2050.51	
7/5/2013 1:00	4.92	47.61	8.67	2050.31	
7/6/2013 1:00	4.92	47.61	8.67	2050.18	
7/7/2013 1:00	4.93	47.59	8.66	2049.99	
7/8/2013 1:00	4.93	47.59	8.66	2049.89	
7/9/2013 1:00	4.93	47.59	8.66	2052.97	
7/10/2013 1:00	4.93	47.59	8.66	2052.48	
7/11/2013 1:00	4.93	47.59	8.66	2052.15	
7/12/2013 1:00	4.92	47.59	8.66	2051.82	
7/13/2013 1:00	4.92	47.59	8.66	2051.46	
7/14/2013 1:00	4.9	47.57	8.65	2051.13	
7/15/2013 1:00	4.88	47.57	8.65	2051.04	
7/16/2013 1:00	4.85	47.57	8.65	2050.81	
7/17/2013 1:00	4.83	47.57	8.65	2050.64	
7/18/2013 1:00	4.8	47.57	8.65	2050.61	

PNR-16 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	4.78	47.55	8.64	2050.38	
7/20/2013 1:00	4.77	47.55	8.64	2050.22	
7/21/2013 1:00	4.76	47.55	8.64	2050.12	
7/22/2013 1:00	4.76	47.55	8.64	2049.92	
7/23/2013 1:00	4.76	47.55	8.64	2049.79	
7/24/2013 1:00	4.76	47.55	8.64	2049.63	
7/25/2013 1:00	4.76	47.55	8.64	2049.59	
7/26/2013 1:00	4.76	47.53	8.63	2049.43	
7/27/2013 1:00	4.76	47.53	8.63	2049.36	
7/28/2013 1:00	4.76	47.53	8.63	2049.30	
7/29/2013 1:00	4.76	47.53	8.63	2049.17	
7/30/2013 1:00	4.76	47.53	8.63	2048.97	
7/31/2013 1:00	4.76	47.52	8.62	2048.87	
8/1/2013 1:00	4.76	47.52	8.62	2048.81	
8/2/2013 1:00	4.76	47.52	8.62	2048.67	
8/3/2013 1:00	4.76	47.52	8.62	2048.54	
8/4/2013 1:00	4.76	47.52	8.62	2048.48	
8/5/2013 1:00	4.75	47.50	8.61	2048.38	
8/6/2013 1:00	4.74	47.50	8.61	2050.91	
8/7/2013 1:00	4.74	47.50	8.61	2050.84	
8/8/2013 1:00	4.73	47.50	8.61	2050.71	
8/9/2013 1:00	4.73	47.50	8.61	2050.51	
8/10/2013 1:00	4.72	47.48	8.6	2050.41	
8/11/2013 1:00	4.72	47.48	8.6	2050.25	
8/12/2013 1:00	4.72	47.48	8.6	2050.09	
8/13/2013 1:00	4.72	47.48	8.6	2049.92	
8/14/2013 1:00	4.71	47.48	8.6	2049.79	
8/15/2013 1:00	4.71	47.46	8.59	2049.69	
8/16/2013 1:00	4.71	47.46	8.59	2049.53	
8/17/2013 1:00	4.71	47.46	8.59	2049.40	
8/18/2013 1:00	4.7	47.46	8.59	2049.23	
8/19/2013 1:00	4.7	47.46	8.59	2049.10	
8/20/2013 1:00	4.7	47.44	8.58	2049.00	
8/21/2013 1:00	4.7	47.44	8.58	2048.84	
8/22/2013 1:00	4.7	47.44	8.58	2048.71	
8/23/2013 1:00	4.69	47.44	8.58	2048.64	
8/24/2013 1:00	4.69	47.44	8.58	2048.54	
8/25/2013 1:00	4.68	47.44	8.58	2048.41	
8/26/2013 1:00	4.68	47.43	8.57	2048.35	
8/27/2013 1:00	4.67	47.43	8.57	2048.25	
8/28/2013 1:00	4.66	47.43	8.57	2048.18	
8/29/2013 1:00	4.66	47.43	8.57	2048.08	
8/30/2013 1:00	4.66	47.43	8.57	2047.99	
8/31/2013 1:00	4.65	47.43	8.57	2047.95	
9/1/2013 1:00	4.65	47.41	8.56	2047.79	
9/2/2013 1:00	4.66	47.41	8.56	2047.79	
9/3/2013 1:00	4.66	47.41	8.56	2047.76	
9/4/2013 1:00	4.66	47.41	8.56	2047.62	
9/5/2013 1:00	4.66	47.41	8.56	2047.56	
9/6/2013 1:00	4.66	47.41	8.56	2047.56	
9/7/2013 1:00	4.66	47.39	8.55	2047.46	
9/8/2013 1:00	4.66	47.39	8.55	2047.39	
9/9/2013 1:00	4.66	47.39	8.55	2047.43	
9/10/2013 1:00	4.66	47.39	8.55	2047.30	
9/11/2013 1:00	4.66	47.39	8.55	2047.30	
9/12/2013 1:00	4.66	47.39	8.55	2047.20	
9/13/2013 1:00	4.66	47.39	8.55	2047.33	
9/14/2013 1:00	4.66	47.39	8.55	2047.33	
9/15/2013 1:00	4.66	47.39	8.55	2047.17	
9/16/2013 1:00	4.66	47.37	8.54	2047.17	
9/17/2013 1:00	4.66	47.37	8.54	2047.23	
9/18/2013 1:00	4.67	47.37	8.54	2047.23	
9/19/2013 1:00	4.67	47.37	8.54	2047.23	
9/20/2013 1:00	4.67	47.37	8.54	2047.33	
9/21/2013 1:00	4.67	47.37	8.54	2047.53	
9/22/2013 1:00	4.67	47.37	8.54	2047.66	
9/23/2013 1:00	4.66	47.35	8.53	2047.69	

PNR-18 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	4.41	48.97	9.43	2049.43	Installed by MJ & CM
5/13/2013 1:00	4.39	48.97	9.43	2049.82	
5/14/2013 1:00	4.38	48.97	9.43	2049.95	
5/15/2013 1:00	4.37	48.97	9.43	2049.76	
5/16/2013 1:00	4.37	48.97	9.43	2049.76	
5/17/2013 1:00	4.36	48.97	9.43	2049.76	
5/18/2013 1:00	4.36	48.97	9.43	2049.82	
5/19/2013 1:00	4.36	48.97	9.43	2049.79	
5/20/2013 1:00	4.35	48.97	9.43	2049.69	
5/21/2013 1:00	4.35	48.97	9.43	2049.63	
5/22/2013 1:00	4.35	48.97	9.43	2049.56	
5/23/2013 1:00	4.35	48.97	9.43	2049.46	
5/24/2013 1:00	4.35	48.97	9.43	2049.72	
5/25/2013 1:00	4.34	48.97	9.43	2049.66	
5/26/2013 1:00	4.36	48.97	9.43	2049.79	
5/27/2013 1:00	4.37	48.97	9.43	2049.86	
5/28/2013 1:00	4.36	48.97	9.43	2050.05	
5/29/2013 1:00	4.36	48.97	9.43	2049.99	
5/30/2013 1:00	4.36	48.97	9.43	2050.02	
5/31/2013 1:00	4.35	48.97	9.43	2050.12	
6/1/2013 1:00	4.35	48.97	9.43	2049.59	
6/2/2013 1:00	4.35	48.97	9.43	2049.53	
6/3/2013 1:00	4.34	48.97	9.43	2049.79	
6/4/2013 1:00	4.34	48.97	9.43	2049.76	
6/5/2013 1:00	4.34	48.97	9.43	2049.49	
6/6/2013 1:00	4.33	48.97	9.43	2049.69	
6/7/2013 1:00	4.38	48.97	9.43	2049.82	
6/8/2013 1:00	4.38	48.97	9.43	2050.18	
6/9/2013 1:00	4.38	48.97	9.43	2050.08	
6/10/2013 1:00	4.38	48.97	9.43	2050.28	
6/11/2013 1:00	4.38	48.97	9.43	2050.28	
6/12/2013 1:00	4.38	48.97	9.43	2050.25	
6/13/2013 1:00	4.38	48.97	9.43	2050.28	
6/14/2013 1:00	4.38	48.97	9.43	2050.71	
6/15/2013 1:00	4.38	48.97	9.43	2050.68	
6/16/2013 1:00	4.38	48.97	9.43	2050.77	
6/17/2013 1:00	4.38	48.97	9.43	2050.64	
6/18/2013 1:00	4.38	48.97	9.43	2050.81	
6/19/2013 1:00	4.38	48.97	9.43	2051.20	
6/20/2013 1:00	4.38	48.97	9.43	2051.53	
6/21/2013 1:00	4.38	48.97	9.43	2051.20	
6/22/2013 1:00	4.38	48.97	9.43	2051.27	
6/23/2013 1:00	4.37	48.97	9.43	2051.50	
6/24/2013 1:00	4.37	48.97	9.43	2051.59	
6/25/2013 1:00	4.37	48.97	9.43	2051.89	
6/26/2013 1:00	4.37	48.97	9.43	2051.76	
6/27/2013 1:00	4.37	48.97	9.43	2051.59	
6/28/2013 1:00	4.37	48.97	9.43	2051.50	
6/29/2013 1:00	4.37	48.97	9.43	2051.53	
6/30/2013 1:00	4.37	48.97	9.43	2051.59	
7/1/2013 1:00	4.38	48.97	9.43	2051.63	
7/2/2013 1:00	4.38	48.97	9.43	2051.66	
7/3/2013 1:00	4.38	48.97	9.43	2051.92	
7/4/2013 1:00	4.37	48.97	9.43	2052.18	
7/5/2013 1:00	4.37	48.97	9.43	2052.18	
7/6/2013 1:00	4.37	48.97	9.43	2052.32	
7/7/2013 1:00	4.37	48.97	9.43	2052.15	
7/8/2013 1:00	4.37	48.97	9.43	2052.22	
7/9/2013 1:00	4.37	48.97	9.43	2052.22	
7/10/2013 1:00	4.36	48.97	9.43	2052.05	
7/11/2013 1:00	4.36	48.97	9.43	2052.38	
7/12/2013 1:00	4.37	48.97	9.43	2052.55	
7/13/2013 1:00	4.36	48.97	9.43	2052.38	
7/14/2013 1:00	4.36	48.97	9.43	2052.12	
7/15/2013 1:00	4.35	48.97	9.43	2052.22	
7/16/2013 1:00	4.35	48.97	9.43	2052.51	
7/17/2013 1:00	4.36	48.97	9.43	2052.25	
7/18/2013 1:00	4.35	48.97	9.43	2052.55	

PNR-18 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	4.35	48.97	9.43	2052.51	
7/20/2013 1:00	4.34	48.97	9.43	2052.58	
7/21/2013 1:00	4.33	48.97	9.43	2052.78	
7/22/2013 1:00	4.33	48.97	9.43	2052.78	
7/23/2013 1:00	4.32	48.97	9.43	2052.71	
7/24/2013 1:00	4.32	48.97	9.43	2052.61	
7/25/2013 1:00	4.31	48.97	9.43	2052.68	
7/26/2013 1:00	4.3	48.97	9.43	2052.48	
7/27/2013 1:00	4.29	48.97	9.43	2052.58	
7/28/2013 1:00	4.28	48.97	9.43	2052.91	
7/29/2013 1:00	4.28	48.97	9.43	2052.97	
7/30/2013 1:00	4.27	48.99	9.44	2052.78	
7/31/2013 1:00	4.31	48.99	9.44	2052.71	
8/1/2013 1:00	4.29	48.97	9.43	2052.78	
8/2/2013 1:00	4.28	48.97	9.43	2052.91	
8/3/2013 1:00	4.26	48.99	9.44	2052.78	
8/4/2013 1:00	4.26	48.99	9.44	2052.87	
8/5/2013 1:00	4.25	48.99	9.44	2052.94	
8/6/2013 1:00	4.24	48.99	9.44	2053.10	
8/7/2013 1:00	4.24	48.99	9.44	2052.91	
8/8/2013 1:00	4.23	48.99	9.44	2052.87	
8/9/2013 1:00	4.23	48.99	9.44	2052.78	
8/10/2013 1:00	4.22	48.99	9.44	2052.81	
8/11/2013 1:00	4.22	48.99	9.44	2052.87	
8/12/2013 1:00	4.21	48.99	9.44	2052.91	
8/13/2013 1:00	4.2	48.99	9.44	2052.87	
8/14/2013 1:00	4.19	48.99	9.44	2052.94	
8/15/2013 1:00	4.18	48.99	9.44	2053.04	
8/16/2013 1:00	4.18	48.99	9.44	2053.10	
8/17/2013 1:00	4.16	48.99	9.44	2053.20	
8/18/2013 1:00	4.15	48.99	9.44	2053.17	
8/19/2013 1:00	4.15	48.99	9.44	2053.17	
8/20/2013 1:00	4.14	48.99	9.44	2053.30	
8/21/2013 1:00	4.14	48.99	9.44	2053.14	
8/22/2013 1:00	4.13	48.99	9.44	2052.91	
8/23/2013 1:00	4.11	48.99	9.44	2053.17	
8/24/2013 1:00	4.1	48.99	9.44	2053.37	
8/25/2013 1:00	4.09	48.99	9.44	2053.23	
8/26/2013 1:00	4.08	48.99	9.44	2053.20	
8/27/2013 1:00	4.06	48.99	9.44	2053.20	
8/28/2013 1:00	4.06	48.99	9.44	2053.10	
8/29/2013 1:00	4.04	49.01	9.45	2053.17	
8/30/2013 1:00	4.03	48.99	9.44	2053.10	
8/31/2013 1:00	4.02	49.01	9.45	2053.20	
9/1/2013 1:00	4	49.01	9.45	2052.97	
9/2/2013 1:00	3.98	49.01	9.45	2053.07	
9/3/2013 1:00	3.97	49.01	9.45	2053.14	
9/4/2013 1:00	3.96	49.01	9.45	2052.97	
9/5/2013 1:00	3.94	49.01	9.45	2052.97	
9/6/2013 1:00	3.92	49.01	9.45	2053.10	
9/7/2013 1:00	3.9	49.01	9.45	2053.00	
9/8/2013 1:00	3.87	49.01	9.45	2052.91	
9/9/2013 1:00	3.86	49.01	9.45	2053.20	
9/10/2013 1:00	3.84	49.01	9.45	2053.07	
9/11/2013 1:00	3.82	49.01	9.45	2052.84	
9/12/2013 1:00	3.81	49.01	9.45	2052.61	
9/13/2013 1:00	3.78	49.01	9.45	2052.84	
9/14/2013 1:00	3.77	49.01	9.45	2053.20	
9/15/2013 1:00	3.76	49.01	9.45	2052.74	
9/16/2013 1:00	3.74	49.01	9.45	2052.81	
9/17/2013 1:00	3.73	49.01	9.45	2053.20	
9/18/2013 1:00	3.72	49.01	9.45	2053.33	
9/19/2013 1:00	3.71	49.01	9.45	2053.10	
9/20/2013 1:00	3.7	49.01	9.45	2052.81	
9/21/2013 1:00	3.69	49.01	9.45	2053.00	
9/22/2013 1:00	3.68	49.01	9.45	2053.33	
9/23/2013 1:00	3.67	49.01	9.45	2053.30	

PNR-29 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	5.42	47.91	8.84	2031.61	Installed by MJ & CM
5/13/2013 1:00	5.4	47.91	8.84	2031.71	
5/14/2013 1:00	5.4	47.91	8.84	2031.67	
5/15/2013 1:00	5.36	47.91	8.84	2031.51	
5/16/2013 1:00	5.39	47.91	8.84	2031.54	
5/17/2013 1:00	5.4	47.93	8.85	2031.54	
5/18/2013 1:00	5.4	47.93	8.85	2031.54	
5/19/2013 1:00	5.4	47.93	8.85	2031.51	
5/20/2013 1:00	5.41	47.93	8.85	2031.48	
5/21/2013 1:00	5.42	47.93	8.85	2031.44	
5/22/2013 1:00	5.43	47.93	8.85	2031.44	
5/23/2013 1:00	5.44	47.93	8.85	2031.38	
5/24/2013 1:00	5.46	47.93	8.85	2031.58	
5/25/2013 1:00	5.45	47.93	8.85	2031.51	
5/26/2013 1:00	5.46	47.93	8.85	2031.48	
5/27/2013 1:00	5.46	47.93	8.85	2031.51	
5/28/2013 1:00	5.47	47.93	8.85	2031.58	
5/29/2013 1:00	5.46	47.93	8.85	2031.51	
5/30/2013 1:00	5.46	47.93	8.85	2031.54	
5/31/2013 1:00	5.46	47.93	8.85	2031.58	
6/1/2013 1:00	5.42	47.93	8.85	2031.25	
6/2/2013 1:00	5.48	47.93	8.85	2031.38	
6/3/2013 1:00	5.49	47.95	8.86	2031.51	
6/4/2013 1:00	5.49	47.93	8.85	2031.48	
6/5/2013 1:00	5.46	47.95	8.86	2031.31	
6/6/2013 1:00	5.49	47.95	8.86	2031.44	
6/7/2013 1:00	5.51	47.95	8.86	2031.54	
6/8/2013 1:00	5.52	47.95	8.86	2031.74	
6/9/2013 1:00	5.52	47.95	8.86	2031.61	
6/10/2013 1:00	5.52	47.95	8.86	2031.71	
6/11/2013 1:00	5.51	47.95	8.86	2031.64	
6/12/2013 1:00	5.49	47.95	8.86	2031.58	
6/13/2013 1:00	5.48	47.95	8.86	2031.58	
6/14/2013 1:00	5.51	47.95	8.86	2031.77	
6/15/2013 1:00	5.52	47.95	8.86	2031.67	
6/16/2013 1:00	5.51	47.95	8.86	2031.71	
6/17/2013 1:00	5.49	47.95	8.86	2031.61	
6/18/2013 1:00	5.49	47.95	8.86	2031.64	
6/19/2013 1:00	5.52	47.95	8.86	2031.81	
6/20/2013 1:00	5.52	47.95	8.86	2032.03	
6/21/2013 1:00	5.52	47.95	8.86	2031.74	
6/22/2013 1:00	5.5	47.95	8.86	2031.74	
6/23/2013 1:00	5.52	47.95	8.86	2031.87	
6/24/2013 1:00	5.52	47.95	8.86	2031.90	
6/25/2013 1:00	5.52	47.95	8.86	2032.03	
6/26/2013 1:00	5.52	47.95	8.86	2031.94	
6/27/2013 1:00	5.5	47.95	8.86	2031.81	
6/28/2013 1:00	5.46	47.95	8.86	2031.67	
6/29/2013 1:00	5.48	47.95	8.86	2031.67	
6/30/2013 1:00	5.5	47.95	8.86	2031.71	
7/1/2013 1:00	5.51	47.95	8.86	2031.67	
7/2/2013 1:00	5.52	47.95	8.86	2031.74	
7/3/2013 1:00	5.52	47.95	8.86	2031.90	
7/4/2013 1:00	5.52	47.95	8.86	2032.07	
7/5/2013 1:00	5.52	47.95	8.86	2032.07	
7/6/2013 1:00	5.52	47.95	8.86	2032.10	
7/7/2013 1:00	5.52	47.95	8.86	2031.94	
7/8/2013 1:00	5.52	47.95	8.86	2031.97	
7/9/2013 1:00	5.52	48.11	8.95	2032.03	
7/10/2013 1:00	5.52	48.06	8.92	2031.90	
7/11/2013 1:00	5.52	48.04	8.91	2032.20	
7/12/2013 1:00	5.52	48.00	8.89	2032.40	
7/13/2013 1:00	5.52	48.00	8.89	2032.17	
7/14/2013 1:00	5.52	47.98	8.88	2031.97	
7/15/2013 1:00	5.52	47.98	8.88	2032.10	
7/16/2013 1:00	5.52	47.98	8.88	2032.33	
7/17/2013 1:00	5.52	47.97	8.87	2032.07	
7/18/2013 1:00	5.52	47.97	8.87	2032.36	

PNR-29 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	5.52	47.97	8.87	2032.36	
7/20/2013 1:00	5.52	47.97	8.87	2032.40	
7/21/2013 1:00	5.43	47.95	8.86	2032.63	
7/22/2013 1:00	5.51	47.95	8.86	2032.56	
7/23/2013 1:00	5.52	47.95	8.86	2032.43	
7/24/2013 1:00	5.52	47.95	8.86	2032.36	
7/25/2013 1:00	5.52	47.95	8.86	2032.40	
7/26/2013 1:00	5.52	47.95	8.86	2032.23	
7/27/2013 1:00	5.52	47.95	8.86	2032.33	
7/28/2013 1:00	5.43	47.95	8.86	2032.66	
7/29/2013 1:00	5.48	47.95	8.86	2032.72	
7/30/2013 1:00	5.5	47.95	8.86	2032.49	
7/31/2013 1:00	5.5	47.95	8.86	2032.40	
8/1/2013 1:00	5.5	47.95	8.86	2032.49	
8/2/2013 1:00	5.5	47.93	8.85	2032.59	
8/3/2013 1:00	5.5	47.93	8.85	2032.49	
8/4/2013 1:00	5.5	47.93	8.85	2032.59	
8/5/2013 1:00	5.5	47.93	8.85	2032.63	
8/6/2013 1:00	5.5	47.93	8.85	2032.86	
8/7/2013 1:00	5.5	47.93	8.85	2032.63	
8/8/2013 1:00	5.51	47.93	8.85	2032.59	
8/9/2013 1:00	5.52	47.93	8.85	2032.46	
8/10/2013 1:00	5.52	47.93	8.85	2032.53	
8/11/2013 1:00	5.52	47.93	8.85	2032.63	
8/12/2013 1:00	5.52	47.93	8.85	2032.63	
8/13/2013 1:00	5.52	47.93	8.85	2032.63	
8/14/2013 1:00	5.52	47.93	8.85	2032.69	
8/15/2013 1:00	5.51	47.93	8.85	2032.82	
8/16/2013 1:00	5.51	47.93	8.85	2032.86	
8/17/2013 1:00	5.51	47.93	8.85	2032.95	
8/18/2013 1:00	5.51	47.93	8.85	2032.92	
8/19/2013 1:00	5.51	47.93	8.85	2032.92	
8/20/2013 1:00	5.51	47.91	8.84	2033.08	
8/21/2013 1:00	5.51	47.91	8.84	2032.92	
8/22/2013 1:00	5.51	47.91	8.84	2032.66	
8/23/2013 1:00	5.51	47.91	8.84	2032.95	
8/24/2013 1:00	5.51	47.91	8.84	2033.15	
8/25/2013 1:00	5.51	47.91	8.84	2032.95	
8/26/2013 1:00	5.51	47.91	8.84	2032.95	
8/27/2013 1:00	5.51	47.91	8.84	2032.95	
8/28/2013 1:00	5.51	47.91	8.84	2032.86	
8/29/2013 1:00	5.51	47.91	8.84	2032.95	
8/30/2013 1:00	5.51	47.91	8.84	2032.86	
8/31/2013 1:00	5.51	47.89	8.83	2032.99	
9/1/2013 1:00	5.51	47.89	8.83	2032.76	
9/2/2013 1:00	5.51	47.89	8.83	2032.86	
9/3/2013 1:00	5.51	47.89	8.83	2032.99	
9/4/2013 1:00	5.51	47.89	8.83	2032.82	
9/5/2013 1:00	5.51	47.89	8.83	2032.79	
9/6/2013 1:00	5.5	47.89	8.83	2033.02	
9/7/2013 1:00	5.5	47.89	8.83	2032.89	
9/8/2013 1:00	5.5	47.89	8.83	2032.86	
9/9/2013 1:00	5.5	47.89	8.83	2033.15	
9/10/2013 1:00	5.5	47.89	8.83	2032.99	
9/11/2013 1:00	5.5	47.89	8.83	2032.79	
9/12/2013 1:00	5.5	47.88	8.82	2032.59	
9/13/2013 1:00	5.5	47.89	8.83	2032.92	
9/14/2013 1:00	5.5	47.88	8.82	2033.25	
9/15/2013 1:00	5.5	47.88	8.82	2032.82	
9/16/2013 1:00	5.5	47.88	8.82	2032.89	
9/17/2013 1:00	5.51	47.88	8.82	2033.31	
9/18/2013 1:00	5.5	47.88	8.82	2033.38	
9/19/2013 1:00	5.5	47.88	8.82	2033.15	
9/20/2013 1:00	5.5	47.88	8.82	2032.86	
9/21/2013 1:00	5.5	47.88	8.82	2033.12	
9/22/2013 1:00	5.5	47.88	8.82	2033.41	
9/23/2013 1:00	5.5	47.86	8.81	2033.38	

PNR-33-06 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	4.93	48.74	9.3	2041.92	Installed by MJ & CM
5/13/2013 1:00	5	48.67	9.26	2042.37	
5/14/2013 1:00	5.01	48.69	9.27	2042.47	
5/15/2013 1:00	4.98	48.67	9.26	2042.28	
5/16/2013 1:00	4.98	48.67	9.26	2042.28	
5/17/2013 1:00	4.97	48.67	9.26	2042.28	
5/18/2013 1:00	4.96	48.67	9.26	2042.31	
5/19/2013 1:00	4.96	48.70	9.28	2042.28	
5/20/2013 1:00	4.96	48.69	9.27	2042.21	
5/21/2013 1:00	4.96	48.69	9.27	2042.11	
5/22/2013 1:00	4.95	48.65	9.25	2042.11	
5/23/2013 1:00	4.96	48.70	9.28	2041.95	
5/24/2013 1:00	4.96	48.67	9.26	2042.21	
5/25/2013 1:00	4.96	48.72	9.29	2042.18	
5/26/2013 1:00	4.96	48.69	9.27	2042.21	
5/27/2013 1:00	4.97	48.69	9.27	2042.28	
5/28/2013 1:00	4.98	48.70	9.28	2042.47	
5/29/2013 1:00	4.98	48.70	9.28	2042.44	
5/30/2013 1:00	4.99	48.72	9.29	2042.47	
5/31/2013 1:00	4.99	48.63	9.24	2042.60	
6/1/2013 1:00	4.99	48.70	9.28	2042.01	
6/2/2013 1:00	4.99	48.69	9.27	2042.01	
6/3/2013 1:00	5	48.69	9.27	2042.24	
6/4/2013 1:00	5	48.70	9.28	2042.18	
6/5/2013 1:00	5	48.67	9.26	2041.95	
6/6/2013 1:00	5	48.69	9.27	2042.05	
6/7/2013 1:00	5	48.67	9.26	2042.15	
6/8/2013 1:00	5	48.69	9.27	2042.44	
6/9/2013 1:00	5	48.67	9.26	2042.34	
6/10/2013 1:00	5	48.69	9.27	2042.37	
6/11/2013 1:00	5	48.72	9.29	2042.31	
6/12/2013 1:00	5	48.70	9.28	2042.15	
6/13/2013 1:00	5	48.69	9.27	2042.11	
6/14/2013 1:00	5	48.67	9.26	2042.41	
6/15/2013 1:00	5	48.67	9.26	2042.31	
6/16/2013 1:00	5	48.63	9.24	2042.28	
6/17/2013 1:00	5	48.69	9.27	2042.08	
6/18/2013 1:00	5	48.70	9.28	2042.15	
6/19/2013 1:00	5	48.65	9.25	2042.41	
6/20/2013 1:00	4.99	48.65	9.25	2042.70	
6/21/2013 1:00	4.99	48.65	9.25	2042.31	
6/22/2013 1:00	4.99	48.70	9.28	2042.28	
6/23/2013 1:00	4.98	48.67	9.26	2042.47	
6/24/2013 1:00	4.98	48.61	9.23	2042.54	
6/25/2013 1:00	4.98	48.67	9.26	2042.70	
6/26/2013 1:00	4.98	48.67	9.26	2042.54	
6/27/2013 1:00	4.97	48.67	9.26	2042.34	
6/28/2013 1:00	4.96	48.67	9.26	2042.21	
6/29/2013 1:00	4.96	48.65	9.25	2042.18	
6/30/2013 1:00	4.97	48.61	9.23	2042.18	
7/1/2013 1:00	4.96	48.69	9.27	2042.18	
7/2/2013 1:00	4.96	48.67	9.26	2042.21	
7/3/2013 1:00	4.96	48.67	9.26	2042.41	
7/4/2013 1:00	4.95	48.65	9.25	2042.64	
7/5/2013 1:00	4.95	48.65	9.25	2042.60	
7/6/2013 1:00	4.95	48.69	9.27	2042.64	
7/7/2013 1:00	4.94	48.63	9.24	2042.44	
7/8/2013 1:00	4.95	48.67	9.26	2042.51	
7/9/2013 1:00	4.94	48.67	9.26	2042.47	
7/10/2013 1:00	4.94	48.65	9.25	2042.34	
7/11/2013 1:00	4.93	48.65	9.25	2042.57	
7/12/2013 1:00	4.94	48.63	9.24	2042.77	
7/13/2013 1:00	4.93	48.65	9.25	2042.54	
7/14/2013 1:00	4.93	48.67	9.26	2042.24	
7/15/2013 1:00	4.93	48.67	9.26	2042.34	
7/16/2013 1:00	4.93	48.67	9.26	2042.54	
7/17/2013 1:00	4.92	48.65	9.25	2042.28	
7/18/2013 1:00	4.92	48.67	9.26	2042.51	

PNR-33-06 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	4.92	48.65	9.25	2042.51	
7/20/2013 1:00	4.92	48.67	9.26	2042.54	
7/21/2013 1:00	4.92	48.63	9.24	2042.70	
7/22/2013 1:00	4.91	48.65	9.25	2042.70	
7/23/2013 1:00	4.91	48.67	9.26	2042.57	
7/24/2013 1:00	4.91	48.61	9.23	2042.54	
7/25/2013 1:00	4.9	48.65	9.25	2042.57	
7/26/2013 1:00	4.9	48.65	9.25	2042.34	
7/27/2013 1:00	4.9	48.65	9.25	2042.44	
7/28/2013 1:00	4.9	48.58	9.21	2042.74	
7/29/2013 1:00	4.91	48.61	9.23	2042.80	
7/30/2013 1:00	4.9	48.69	9.27	2042.57	
7/31/2013 1:00	4.9	48.61	9.23	2042.54	
8/1/2013 1:00	4.9	48.63	9.24	2042.64	
8/2/2013 1:00	4.9	48.63	9.24	2042.70	
8/3/2013 1:00	4.9	48.65	9.25	2042.60	
8/4/2013 1:00	4.9	48.67	9.26	2042.70	
8/5/2013 1:00	4.9	48.67	9.26	2042.74	
8/6/2013 1:00	4.9	48.67	9.26	2042.97	
8/7/2013 1:00	4.9	48.63	9.24	2042.77	
8/8/2013 1:00	4.9	48.63	9.24	2042.67	
8/9/2013 1:00	4.89	48.65	9.25	2042.60	
8/10/2013 1:00	4.9	48.63	9.24	2042.64	
8/11/2013 1:00	4.9	48.67	9.26	2042.74	
8/12/2013 1:00	4.89	48.63	9.24	2042.77	
8/13/2013 1:00	4.89	48.65	9.25	2042.67	
8/14/2013 1:00	4.89	48.69	9.27	2042.77	
8/15/2013 1:00	4.89	48.65	9.25	2042.90	
8/16/2013 1:00	4.89	48.67	9.26	2042.97	
8/17/2013 1:00	4.89	48.63	9.24	2043.06	
8/18/2013 1:00	4.89	48.61	9.23	2043.03	
8/19/2013 1:00	4.89	48.67	9.26	2043.06	
8/20/2013 1:00	4.89	48.65	9.25	2043.20	
8/21/2013 1:00	4.9	48.63	9.24	2043.03	
8/22/2013 1:00	4.89	48.67	9.26	2042.80	
8/23/2013 1:00	4.89	48.67	9.26	2043.06	
8/24/2013 1:00	4.89	48.67	9.26	2043.29	
8/25/2013 1:00	4.89	48.67	9.26	2043.13	
8/26/2013 1:00	4.9	48.63	9.24	2043.16	
8/27/2013 1:00	4.89	48.67	9.26	2043.23	
8/28/2013 1:00	4.89	48.65	9.25	2043.10	
8/29/2013 1:00	4.89	48.67	9.26	2043.16	
8/30/2013 1:00	4.89	48.69	9.27	2043.10	
8/31/2013 1:00	4.89	48.63	9.24	2043.23	
9/1/2013 1:00	4.89	48.69	9.27	2043.00	
9/2/2013 1:00	4.89	48.65	9.25	2043.10	
9/3/2013 1:00	4.89	48.67	9.26	2043.20	
9/4/2013 1:00	4.89	48.69	9.27	2043.06	
9/5/2013 1:00	4.89	48.69	9.27	2043.06	
9/6/2013 1:00	4.9	48.69	9.27	2043.23	
9/7/2013 1:00	4.9	48.70	9.28	2043.10	
9/8/2013 1:00	4.89	48.63	9.24	2043.10	
9/9/2013 1:00	4.9	48.63	9.24	2043.36	
9/10/2013 1:00	4.9	48.70	9.28	2043.23	
9/11/2013 1:00	4.9	48.67	9.26	2043.06	
9/12/2013 1:00	4.9	48.67	9.26	2042.83	
9/13/2013 1:00	4.9	48.70	9.28	2043.10	
9/14/2013 1:00	4.9	48.65	9.25	2043.42	
9/15/2013 1:00	4.9	48.65	9.25	2043.03	
9/16/2013 1:00	4.9	48.69	9.27	2043.10	
9/17/2013 1:00	4.9	48.63	9.24	2043.52	
9/18/2013 1:00	4.9	48.69	9.27	2043.65	
9/19/2013 1:00	4.9	48.69	9.27	2043.46	
9/20/2013 1:00	4.9	48.65	9.25	2043.16	
9/21/2013 1:00	4.9	48.67	9.26	2043.42	
9/22/2013 1:00	4.9	48.69	9.27	2043.75	
9/23/2013 1:00	4.9	48.69	9.27	2043.72	

PNR-36-07 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	3.68	48.29	9.05	2055.72	Installed by MJ & CM
5/13/2013 1:00	3.67	48.29	9.05	2056.15	
5/14/2013 1:00	3.69	48.27	9.04	2056.28	
5/15/2013 1:00	3.69	48.29	9.05	2056.05	
5/16/2013 1:00	3.68	48.29	9.05	2056.08	
5/17/2013 1:00	3.68	48.29	9.05	2056.08	
5/18/2013 1:00	3.68	48.29	9.05	2056.11	
5/19/2013 1:00	3.68	48.31	9.06	2056.15	
5/20/2013 1:00	3.68	48.31	9.06	2056.08	
5/21/2013 1:00	3.68	48.31	9.06	2055.98	
5/22/2013 1:00	3.67	48.29	9.05	2055.98	
5/23/2013 1:00	3.67	48.29	9.05	2055.85	
5/24/2013 1:00	3.66	48.31	9.06	2056.08	
5/25/2013 1:00	3.67	48.29	9.05	2056.02	
5/26/2013 1:00	3.68	48.31	9.06	2056.11	
5/27/2013 1:00	3.67	48.29	9.05	2056.18	
5/28/2013 1:00	3.68	48.31	9.06	2056.38	
5/29/2013 1:00	3.68	48.29	9.05	2056.31	
5/30/2013 1:00	3.68	48.31	9.06	2056.41	
5/31/2013 1:00	3.68	48.31	9.06	2056.47	
6/1/2013 1:00	3.68	48.31	9.06	2055.98	
6/2/2013 1:00	3.63	48.31	9.06	2056.02	
6/3/2013 1:00	3.53	48.29	9.05	2056.44	
6/4/2013 1:00	3.45	48.27	9.04	2056.57	
6/5/2013 1:00	3.45	48.25	9.03	2056.61	
6/6/2013 1:00	3.52	48.24	9.02	2057.07	
6/7/2013 1:00	3.62	48.24	9.02	2057.56	
6/8/2013 1:00	3.68	48.24	9.02	2058.25	
6/9/2013 1:00	3.71	48.24	9.02	2058.44	
6/10/2013 1:00	3.73	48.24	9.02	2058.87	
6/11/2013 1:00	3.74	48.22	9.01	2059.07	
6/12/2013 1:00	3.74	48.24	9.02	2059.23	
6/13/2013 1:00	3.75	48.22	9.01	2059.39	
6/14/2013 1:00	3.74	48.22	9.01	2059.89	
6/15/2013 1:00	3.74	48.22	9.01	2059.95	
6/16/2013 1:00	3.73	48.22	9.01	2060.12	
6/17/2013 1:00	3.72	48.22	9.01	2060.05	
6/18/2013 1:00	3.72	48.22	9.01	2060.25	
6/19/2013 1:00	3.71	48.22	9.01	2060.58	
6/20/2013 1:00	3.7	48.20	9	2061.00	
6/21/2013 1:00	3.7	48.22	9.01	2060.67	
6/22/2013 1:00	3.69	48.22	9.01	2060.74	
6/23/2013 1:00	3.68	48.22	9.01	2060.97	
6/24/2013 1:00	3.68	48.22	9.01	2061.07	
6/25/2013 1:00	3.67	48.20	9	2061.33	
6/26/2013 1:00	3.67	48.20	9	2061.20	
6/27/2013 1:00	3.66	48.22	9.01	2061.04	
6/28/2013 1:00	3.66	48.22	9.01	2060.87	
6/29/2013 1:00	3.66	48.22	9.01	2060.97	
6/30/2013 1:00	3.66	48.22	9.01	2061.00	
7/1/2013 1:00	3.65	48.20	9	2060.97	
7/2/2013 1:00	3.65	48.20	9	2061.04	
7/3/2013 1:00	3.64	48.20	9	2061.26	
7/4/2013 1:00	3.64	48.20	9	2061.46	
7/5/2013 1:00	3.64	48.20	9	2061.49	
7/6/2013 1:00	3.64	48.20	9	2061.53	
7/7/2013 1:00	3.63	48.22	9.01	2061.33	
7/8/2013 1:00	3.63	48.22	9.01	2061.36	
7/9/2013 1:00	3.62	48.20	9	2061.33	
7/10/2013 1:00	3.63	48.20	9	2061.20	
7/11/2013 1:00	3.64	48.22	9.01	2061.49	
7/12/2013 1:00	3.64	48.22	9.01	2061.69	
7/13/2013 1:00	3.64	48.20	9	2061.53	
7/14/2013 1:00	3.65	48.22	9.01	2061.30	
7/15/2013 1:00	3.65	48.20	9	2061.36	
7/16/2013 1:00	3.65	48.20	9	2061.63	
7/17/2013 1:00	3.65	48.22	9.01	2061.33	
7/18/2013 1:00	3.65	48.20	9	2061.63	

PNR-36-07 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	3.64	48.22	9.01	2061.59	
7/20/2013 1:00	3.64	48.20	9	2061.63	
7/21/2013 1:00	3.64	48.20	9	2061.82	
7/22/2013 1:00	3.64	48.22	9.01	2061.72	
7/23/2013 1:00	3.63	48.22	9.01	2061.63	
7/24/2013 1:00	3.63	48.22	9.01	2061.53	
7/25/2013 1:00	3.63	48.22	9.01	2061.59	
7/26/2013 1:00	3.62	48.22	9.01	2061.30	
7/27/2013 1:00	3.62	48.22	9.01	2061.40	
7/28/2013 1:00	3.62	48.20	9	2061.66	
7/29/2013 1:00	3.61	48.22	9.01	2061.69	
7/30/2013 1:00	3.61	48.22	9.01	2061.49	
7/31/2013 1:00	3.61	48.22	9.01	2061.33	
8/1/2013 1:00	3.6	48.22	9.01	2061.43	
8/2/2013 1:00	3.6	48.22	9.01	2061.46	
8/3/2013 1:00	3.6	48.22	9.01	2061.33	
8/4/2013 1:00	3.59	48.22	9.01	2061.40	
8/5/2013 1:00	3.59	48.22	9.01	2061.40	
8/6/2013 1:00	3.59	48.22	9.01	2061.56	
8/7/2013 1:00	3.58	48.22	9.01	2061.33	
8/8/2013 1:00	3.58	48.22	9.01	2061.26	
8/9/2013 1:00	3.58	48.22	9.01	2061.13	
8/10/2013 1:00	3.58	48.22	9.01	2061.17	
8/11/2013 1:00	3.58	48.22	9.01	2061.20	
8/12/2013 1:00	3.57	48.22	9.01	2061.20	
8/13/2013 1:00	3.57	48.22	9.01	2061.13	
8/14/2013 1:00	3.57	48.22	9.01	2061.20	
8/15/2013 1:00	3.57	48.24	9.02	2061.26	
8/16/2013 1:00	3.57	48.22	9.01	2061.26	
8/17/2013 1:00	3.56	48.24	9.02	2061.36	
8/18/2013 1:00	3.56	48.24	9.02	2061.26	
8/19/2013 1:00	3.56	48.24	9.02	2061.30	
8/20/2013 1:00	3.56	48.24	9.02	2061.40	
8/21/2013 1:00	3.55	48.22	9.01	2061.20	
8/22/2013 1:00	3.55	48.24	9.02	2060.94	
8/23/2013 1:00	3.54	48.24	9.02	2061.17	
8/24/2013 1:00	3.55	48.24	9.02	2061.33	
8/25/2013 1:00	3.55	48.24	9.02	2061.13	
8/26/2013 1:00	3.54	48.24	9.02	2061.10	
8/27/2013 1:00	3.54	48.24	9.02	2061.07	
8/28/2013 1:00	3.54	48.24	9.02	2060.97	
8/29/2013 1:00	3.54	48.24	9.02	2061.00	
8/30/2013 1:00	3.54	48.24	9.02	2060.84	
8/31/2013 1:00	3.54	48.24	9.02	2060.97	
9/1/2013 1:00	3.53	48.24	9.02	2060.71	
9/2/2013 1:00	3.53	48.24	9.02	2060.74	
9/3/2013 1:00	3.53	48.24	9.02	2060.84	
9/4/2013 1:00	3.52	48.24	9.02	2060.64	
9/5/2013 1:00	3.52	48.24	9.02	2060.64	
9/6/2013 1:00	3.52	48.24	9.02	2060.74	
9/7/2013 1:00	3.52	48.24	9.02	2060.64	
9/8/2013 1:00	3.52	48.24	9.02	2060.54	
9/9/2013 1:00	3.52	48.24	9.02	2060.77	
9/10/2013 1:00	3.52	48.24	9.02	2060.61	
9/11/2013 1:00	3.52	48.25	9.03	2060.44	
9/12/2013 1:00	3.52	48.24	9.02	2060.18	
9/13/2013 1:00	3.52	48.24	9.02	2060.41	
9/14/2013 1:00	3.52	48.25	9.03	2060.77	
9/15/2013 1:00	3.52	48.25	9.03	2060.28	
9/16/2013 1:00	3.52	48.24	9.02	2060.35	
9/17/2013 1:00	3.52	48.25	9.03	2060.71	
9/18/2013 1:00	3.52	48.25	9.03	2060.77	
9/19/2013 1:00	3.52	48.25	9.03	2060.58	
9/20/2013 1:00	3.52	48.25	9.03	2060.25	
9/21/2013 1:00	3.51	48.25	9.03	2060.48	
9/22/2013 1:00	3.5	48.25	9.03	2060.77	
9/23/2013 1:00	3.51	48.25	9.03	2060.74	

USGS 92-12 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
5/12/2013 1:00	3.45	47.44	8.58	2058.21	Installed by MJ & CM
5/13/2013 1:00	3.46	47.48	8.6	2058.21	
5/14/2013 1:00	3.46	47.46	8.59	2058.28	
5/15/2013 1:00	3.46	47.39	8.55	2058.18	
5/16/2013 1:00	3.46	47.35	8.53	2058.15	
5/17/2013 1:00	3.46	47.43	8.57	2058.11	
5/18/2013 1:00	3.46	47.48	8.6	2058.11	
5/19/2013 1:00	3.46	47.48	8.6	2058.05	
5/20/2013 1:00	3.46	47.43	8.57	2058.01	
5/21/2013 1:00	3.46	47.48	8.6	2058.05	
5/22/2013 1:00	3.46	47.48	8.6	2058.01	
5/23/2013 1:00	3.46	47.48	8.6	2057.95	
5/24/2013 1:00	3.46	47.46	8.59	2057.92	
5/25/2013 1:00	3.46	47.39	8.55	2057.92	
5/26/2013 1:00	3.46	47.48	8.6	2057.88	
5/27/2013 1:00	3.46	47.48	8.6	2057.85	
5/28/2013 1:00	3.46	47.35	8.53	2058.57	
5/29/2013 1:00	3.46	47.43	8.57	2059.06	
5/30/2013 1:00	3.46	47.41	8.56	2059.03	
5/31/2013 1:00	3.46	47.39	8.55	2060.18	
6/1/2013 1:00	3.46	47.34	8.52	2060.64	
6/2/2013 1:00	3.46	47.35	8.53	2060.48	
6/3/2013 1:00	3.46	47.34	8.52	2060.38	
6/4/2013 1:00	3.46	47.39	8.55	2061.26	
6/5/2013 1:00	3.46	47.35	8.53	2061.10	
6/6/2013 1:00	3.46	47.37	8.54	2061.03	
6/7/2013 1:00	3.46	47.43	8.57	2060.90	
6/8/2013 1:00	3.46	47.41	8.56	2061.07	
6/9/2013 1:00	3.46	47.43	8.57	2061.20	
6/10/2013 1:00	3.46	47.46	8.59	2061.10	
6/11/2013 1:00	3.46	47.44	8.58	2060.93	
6/12/2013 1:00	3.46	47.48	8.6	2060.97	
6/13/2013 1:00	3.46	47.52	8.62	2060.90	
6/14/2013 1:00	3.46	47.52	8.62	2060.77	
6/15/2013 1:00	3.46	47.52	8.62	2061.43	
6/16/2013 1:00	3.46	47.53	8.63	2061.16	
6/17/2013 1:00	3.46	47.55	8.64	2060.87	
6/18/2013 1:00	3.46	47.53	8.63	2060.77	
6/19/2013 1:00	3.46	47.50	8.61	2060.67	
6/20/2013 1:00	3.46	47.55	8.64	2060.54	
6/21/2013 1:00	3.46	47.53	8.63	2060.48	
6/22/2013 1:00	3.46	47.59	8.66	2060.74	
6/23/2013 1:00	3.45	47.52	8.62	2060.84	
6/24/2013 1:00	3.46	47.57	8.65	2060.87	
6/25/2013 1:00	3.46	47.59	8.66	2060.71	
6/26/2013 1:00	3.45	47.52	8.62	2061.33	
6/27/2013 1:00	3.46	47.55	8.64	2061.10	
6/28/2013 1:00	3.46	47.59	8.66	2060.77	
6/29/2013 1:00	3.45	47.61	8.67	2060.57	
6/30/2013 1:00	3.46	47.62	8.68	2060.38	
7/1/2013 1:00	3.46	47.62	8.68	2060.25	
7/2/2013 1:00	3.46	47.64	8.69	2060.15	
7/3/2013 1:00	3.45	47.62	8.68	2060.05	
7/4/2013 1:00	3.45	47.62	8.68	2059.92	
7/5/2013 1:00	3.45	47.62	8.68	2059.82	
7/6/2013 1:00	3.45	47.62	8.68	2059.79	
7/7/2013 1:00	3.46	47.66	8.7	2059.66	
7/8/2013 1:00	3.46	47.66	8.7	2059.66	
7/9/2013 1:00	3.46	47.59	8.66	2062.05	
7/10/2013 1:00	3.45	47.61	8.67	2061.85	
7/11/2013 1:00	3.45	47.61	8.67	2061.56	
7/12/2013 1:00	3.46	47.59	8.66	2061.30	
7/13/2013 1:00	3.45	47.62	8.68	2060.93	
7/14/2013 1:00	3.45	47.64	8.69	2060.64	
7/15/2013 1:00	3.45	47.64	8.69	2060.54	
7/16/2013 1:00	3.46	47.68	8.71	2060.41	
7/17/2013 1:00	3.45	47.62	8.68	2060.21	
7/18/2013 1:00	3.45	47.66	8.7	2060.28	

USGS 92-12 Diver Data

Date/time	Specific Conductivity [mS/cm]	Temperature [ºF]	Temperature [ºC]	Water Level Elevation (feet)	Notes
7/19/2013 1:00	3.45	47.64	8.69	2060.15	
7/20/2013 1:00	3.45	47.70	8.72	2059.98	
7/21/2013 1:00	3.45	47.66	8.7	2059.95	
7/22/2013 1:00	3.45	47.71	8.73	2059.79	
7/23/2013 1:00	3.45	47.66	8.7	2059.72	
7/24/2013 1:00	3.45	47.71	8.73	2059.69	
7/25/2013 1:00	3.45	47.70	8.72	2059.62	
7/26/2013 1:00	3.45	47.70	8.72	2059.56	
7/27/2013 1:00	3.45	47.68	8.71	2059.49	
7/28/2013 1:00	3.45	47.70	8.72	2059.43	
7/29/2013 1:00	3.45	47.71	8.73	2059.36	
7/30/2013 1:00	3.45	47.73	8.74	2059.29	
7/31/2013 1:00	3.45	47.73	8.74	2059.23	
8/1/2013 1:00	3.45	47.71	8.73	2059.20	
8/2/2013 1:00	3.45	47.70	8.72	2059.13	
8/3/2013 1:00	3.45	47.70	8.72	2059.10	
8/4/2013 1:00	3.45	47.70	8.72	2059.06	
8/5/2013 1:00	3.45	47.73	8.74	2059.03	
8/6/2013 1:00	3.45	47.70	8.72	2059.56	
8/7/2013 1:00	3.45	47.73	8.74	2059.92	
8/8/2013 1:00	3.45	47.71	8.73	2059.92	
8/9/2013 1:00	3.45	47.71	8.73	2059.79	
8/10/2013 1:00	3.45	47.68	8.71	2059.69	
8/11/2013 1:00	3.45	47.70	8.72	2059.59	
8/12/2013 1:00	3.45	47.73	8.74	2059.52	
8/13/2013 1:00	3.44	47.70	8.72	2059.39	
8/14/2013 1:00	3.45	47.71	8.73	2059.33	
8/15/2013 1:00	3.45	47.73	8.74	2059.26	
8/16/2013 1:00	3.45	47.73	8.74	2059.23	
8/17/2013 1:00	3.45	47.71	8.73	2059.10	
8/18/2013 1:00	3.45	47.73	8.74	2059.03	
8/19/2013 1:00	3.45	47.75	8.75	2059.00	
8/20/2013 1:00	3.45	47.70	8.72	2058.93	
8/21/2013 1:00	3.44	47.71	8.73	2058.87	
8/22/2013 1:00	3.45	47.73	8.74	2058.77	
8/23/2013 1:00	3.45	47.75	8.75	2058.74	
8/24/2013 1:00	3.44	47.71	8.73	2058.70	
8/25/2013 1:00	3.44	47.70	8.72	2058.64	
8/26/2013 1:00	3.45	47.75	8.75	2058.61	
8/27/2013 1:00	3.44	47.73	8.74	2058.61	
8/28/2013 1:00	3.44	47.73	8.74	2058.51	
8/29/2013 1:00	3.44	47.73	8.74	2058.51	
8/30/2013 1:00	3.44	47.75	8.75	2058.41	
8/31/2013 1:00	3.44	47.73	8.74	2058.41	
9/1/2013 1:00	3.44	47.79	8.77	2058.34	
9/2/2013 1:00	3.45	47.77	8.76	2058.34	
9/3/2013 1:00	3.44	47.70	8.72	2058.28	
9/4/2013 1:00	3.44	47.77	8.76	2058.24	
9/5/2013 1:00	3.44	47.71	8.73	2058.21	
9/6/2013 1:00	3.44	47.75	8.75	2058.24	
9/7/2013 1:00	3.44	47.75	8.75	2058.18	
9/8/2013 1:00	3.44	47.75	8.75	2058.15	
9/9/2013 1:00	3.44	47.75	8.75	2058.21	
9/10/2013 1:00	3.44	47.77	8.76	2058.21	
9/11/2013 1:00	3.44	47.73	8.74	2058.21	
9/12/2013 1:00	3.44	47.75	8.75	2058.15	
9/13/2013 1:00	3.44	47.75	8.75	2058.18	
9/14/2013 1:00	3.44	47.70	8.72	2058.28	
9/15/2013 1:00	3.44	47.73	8.74	2058.18	
9/16/2013 1:00	3.44	47.71	8.73	2058.15	
9/17/2013 1:00	3.44	47.75	8.75	2058.18	
9/18/2013 1:00	3.44	47.75	8.75	2058.21	
9/19/2013 1:00	3.44	47.75	8.75	2058.18	
9/20/2013 1:00	3.44	47.75	8.75	2058.18	
9/21/2013 1:00	3.44	47.75	8.75	2058.24	
9/22/2013 1:00	3.44	47.75	8.75	2058.28	
9/23/2013 1:00	3.44	47.70	8.72	2058.31	

APPENDIX B
Analytical Results

ANALYTICAL SUMMARY REPORT

October 04, 2013

Geosyntec Consultants
1201 3rd Ave Ste 330
Seattle, WA 98101-3065

Workorder No.: B13092567

Project Name: Mesa-Biere 1-22 Well Site

Energy Laboratories Inc Billings MT received the following 10 samples for Geosyntec Consultants on 9/27/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B13092567-001	MOC-20B	09/24/13 17:36	09/27/13	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B13092567-002	PNR-27	09/26/13 10:39	09/27/13	Aqueous	Same As Above
B13092567-003	PNR-34-07	09/24/13 14:42	09/27/13	Aqueous	Same As Above
B13092567-004	USGS-93-3	09/25/13 17:08	09/27/13	Aqueous	Same As Above
B13092567-005	MOC-20A	09/25/13 9:28	09/27/13	Aqueous	Same As Above
B13092567-006	MOC-1B	09/25/13 17:33	09/27/13	Aqueous	Same As Above
B13092567-007	MOC-3	09/25/13 14:30	09/27/13	Aqueous	Same As Above
B13092567-008	PNR-41-12	09/26/13 12:41	09/27/13	Aqueous	Same As Above
B13092567-009	PNR-6	09/26/13 10:12	09/27/13	Aqueous	Same As Above
B13092567-010	PNR-35-07	09/25/13 12:42	09/27/13	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-001
Client Sample ID MOC-20B

Report Date: 10/04/13
Collection Date: 09/24/13 17:36
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3940	mg/L		10		A2540 C	09/30/13 13:49 / pjw
INORGANICS							
Chloride	209	mg/L	D	5		E300.0	10/01/13 18:02 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-002
Client Sample ID PNR-27

Report Date: 10/04/13
Collection Date: 09/26/13 10:39
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	15700	mg/L		10		A2540 C	10/01/13 12:36 / pjw
INORGANICS							
Chloride	7140	mg/L	D	100		E300.0	10/03/13 18:35 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-003
Client Sample ID PNR-34-07

Report Date: 10/04/13
Collection Date: 09/24/13 14:42
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	24200	mg/L		10		A2540 C	09/30/13 13:48 / pjw
INORGANICS							
Chloride	10600	mg/L	D	50		E300.0	10/01/13 18:32 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-004
Client Sample ID USGS-93-3

Report Date: 10/04/13
Collection Date: 09/25/13 17:08
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	6580	mg/L		10		A2540 C	10/01/13 12:37 / pjw
INORGANICS							
Chloride	2150	mg/L	D	10		E300.0	10/01/13 18:47 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-005
Client Sample ID MOC-20A

Report Date: 10/04/13
Collection Date: 09/25/13 09:28
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5210	mg/L		10		A2540 C	10/01/13 12:37 / pjw
INORGANICS							
Chloride	136	mg/L	D	5		E300.0	10/01/13 19:02 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-006
Client Sample ID MOC-1B

Report Date: 10/04/13
Collection Date: 09/25/13 17:33
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3460	mg/L		10		A2540 C	10/01/13 12:38 / pjw
INORGANICS							
Chloride	51	mg/L	D	5		E300.0	10/01/13 19:17 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-007
Client Sample ID MOC-3

Report Date: 10/04/13
Collection Date: 09/25/13 14:30
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2670	mg/L		10		A2540 C	10/01/13 12:38 / pjw
INORGANICS							
Chloride	59	mg/L	D	2		E300.0	10/01/13 19:32 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-008
Client Sample ID PNR-41-12

Report Date: 10/04/13
Collection Date: 09/26/13 12:41
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	1990	mg/L		10		A2540 C	10/01/13 12:38 / pjw
INORGANICS							
Chloride	108	mg/L	D	2		E300.0	10/01/13 19:48 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-009
Client Sample ID PNR-6

Report Date: 10/04/13
Collection Date: 09/26/13 10:12
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3820	mg/L		10		A2540 C	10/01/13 12:38 / pjw
INORGANICS							
Chloride	36	mg/L	D	5		E300.0	10/01/13 20:03 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092567-010
Client Sample ID PNR-35-07

Report Date: 10/04/13
Collection Date: 09/25/13 12:42
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3470	mg/L		10		A2540 C	10/01/13 12:39 / pjw
INORGANICS							
Chloride	240	mg/L	D	5		E300.0	10/01/13 20:48 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/04/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092567

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS130930A	
Sample ID: MB-1_130930A	Method Blank				Run: BAL #11_130930B			09/30/13 13:43	
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_130930A	Laboratory Control Sample				Run: BAL #11_130930B			09/30/13 13:44	
Solids, Total Dissolved TDS @ 180 C	2000	mg/L	10	100	90	110			
Sample ID: B13092549-002A MS	Sample Matrix Spike				Run: BAL #11_130930B			09/30/13 13:46	
Solids, Total Dissolved TDS @ 180 C	2990	mg/L	10	97	90	110			
Sample ID: B13092567-001A DUP	Sample Duplicate				Run: BAL #11_130930B			09/30/13 13:50	
Solids, Total Dissolved TDS @ 180 C	3910	mg/L	10		90	110	0.9	5	
Method: A2540 C								Batch: TDS131001A	
Sample ID: MB-1_131001A	Method Blank				Run: BAL #11_131001A			10/01/13 12:32	
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_131001A	Laboratory Control Sample				Run: BAL #11_131001A			10/01/13 12:32	
Solids, Total Dissolved TDS @ 180 C	2030	mg/L	10	101	90	110			
Sample ID: B13092547-001A MS	Sample Matrix Spike				Run: BAL #11_131001A			10/01/13 12:33	
Solids, Total Dissolved TDS @ 180 C	2490	mg/L	10	99	90	110			
Sample ID: B13092567-005A DUP	Sample Duplicate				Run: BAL #11_131001A			10/01/13 12:37	
Solids, Total Dissolved TDS @ 180 C	5250	mg/L	10		90	110	0.9	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/04/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092567

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC203-B_131001A	
Sample ID:	**ICV**	Initial Calibration Verification Standard							10/01/13 11:44	
Chloride		24.1	mg/L	1.0	97	90	110			
Method:	**E300.0**								Batch: R212619	
Sample ID:	**ICB**	Method Blank				Run: IC203-B_131001A			10/01/13 11:59	
Chloride		0.2	mg/L	0.06						
Sample ID:	**LFB**	Laboratory Fortified Blank				Run: IC203-B_131001A			10/01/13 12:14	
Chloride		23.7	mg/L	1.0	94	90	110			
Sample ID:	**B13092559-003AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/01/13 17:32	
Chloride		22700	mg/L	53	85	90	110			S
Sample ID:	**B13092559-003AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/01/13 17:47	
Chloride		22700	mg/L	53	85	90	110	0.0	20	S
Sample ID:	**B13092567-010AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/01/13 21:03	
Chloride		754	mg/L	5.3	103	90	110			
Sample ID:	**B13092567-010AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/01/13 21:18	
Chloride		745	mg/L	5.3	101	90	110	1.2	20	
Method:	**E300.0**								Analytical Run: IC203-B_131003A	
Sample ID:	**ICV**	Initial Calibration Verification Standard							10/03/13 16:19	
Chloride		24.5	mg/L	1.0	98	90	110			
Method:	**E300.0**								Batch: R212767	
Sample ID:	**ICB**	Method Blank				Run: IC203-B_131003A			10/03/13 16:35	
Chloride		0.08	mg/L	0.06						
Sample ID:	**LFB**	Laboratory Fortified Blank				Run: IC203-B_131003A			10/03/13 16:50	
Chloride		24.4	mg/L	1.0	97	90	110			
Sample ID:	**B13092400-006AMS**	Sample Matrix Spike				Run: IC203-B_131003A			10/03/13 17:20	
Chloride		51.3	mg/L	1.0	100	90	110			
Sample ID:	**B13092400-006AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131003A			10/03/13 17:35	
Chloride		51.2	mg/L	1.0	99	90	110	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Geosyntec Consultants B13092567

Login completed by: Lisa Gancze
Date Received: 9/27/2013
Reviewed by: BL2000\lcadreau
Received by: lg
Reviewed Date: 9/30/2013
Carrier name: Return-UPS Ground N/C

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	℃ On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Temp Blank temperature for Cooler 1 was 1.0℃, Cooler 2 was 1.6℃, Cooler 3 was 1.2℃ and Cooler 4 was 2.0℃.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
GEOSYNTEC	MESA-BIERE 1-22 WELL SITE	State: MT	Yes ☐ No ☐

Report Mail Address (Required):	Contact Name:	Phone/Fax:	Cell:	Sampler: (Please Print)
1201 THIRD AVE, SUITE 330 SEATTLE, WA 98101 ☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM	CHRISTA TYRRELL	406-209-1905		CT, SW, CL, MJ, CM, MU

Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:
CHRISTA TYRRELL 406-209-1905	—	72929

Invoice Address (Required): SAME

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Special Report/Formats:

☐ DW ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☒ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	CL, TDS	SEE ATTACHED	Standard Turnaround (TAT)	RUSH	Comments:	LABORATORY USE ONLY
4	1 MOC-20B	9/24/13	1736	lw	✓		✓		Cooler #1 1.0°	B309256 7-001
4	2 PNR-27	9/26/13	1039	lw	✓				#2 1.6°	-002
4	3 PNR-34-07	9/24/13	1442	lw	✓				#3 1.2°	-003
4	4 USGS 93.3	9/25/13	1708	lw	✓				#4 2.0°	-004
4	5 MOC-20A	9/25/13	0928	lw	✓					-005
4	6 MOC-1B	9/25/13	1733	lw	✓					-006
4	7 MOC-3	9/25/13	1430	lw	✓					-007
4	8 PNR-41-12	9/26/13	1241	lw	✓					-008
4	9 PNR-6	9/26/13	1012	lw	✓					-009
4	10 PNR-35-07	9/25/13	1242	lw	✓					-010

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Shipped by: RUSHBYRD

Cooler ID(s):

Receipt Temp: TB °C

On Ice: (Y) N

Custody Seal: On Bottle Y (N); On Cooler Y (N); Intact (Y) N; Signature Match (Y) N

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
C. TYRRELL	09/26/13 1530	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	9-27-13 11:45	[signature]

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

October 11, 2013

Geosyntec Consultants
1201 3rd Ave Ste 330
Seattle, WA 98101-3065

Workorder No.: B13092542

Project Name: Mesa-Biere 1-22 Well Site

Energy Laboratories Inc Billings MT received the following 6 samples for Geosyntec Consultants on 9/27/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B13092542-001	PNR-21	09/26/13 9:11	09/27/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092542-002	M-28	09/25/13 14:42	09/27/13	Aqueous	Same As Above
B13092542-003	PNR-5	09/25/13 16:16	09/27/13	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B13092542-004	PNR-5 DUP	09/25/13 16:16	09/27/13	Aqueous	Same As Above
B13092542-005	PNR-14	09/25/13 17:37	09/27/13	Aqueous	Same As Above
B13092542-006	PNR-9	09/26/13 14:15	09/27/13	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Sample Delivery Group: B13092542

Report Date: 10/11/13

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092542-001
Client Sample ID PNR-21

Report Date: 10/11/13
Collection Date: 09/26/13 09:11
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	13200	mg/L		10		A2540 C	10/01/13 12:34 / pjw
INORGANICS							
Chloride	6970	mg/L	D	20		E300.0	10/02/13 12:14 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		2.5		SW8260B	10/03/13 13:21 / jrj
Ethylbenzene	ND	ug/L		2.5		SW8260B	10/03/13 13:21 / jrj
Toluene	ND	ug/L		2.5		SW8260B	10/03/13 13:21 / jrj
m+p-Xylenes	ND	ug/L		2.5		SW8260B	10/03/13 13:21 / jrj
o-Xylene	ND	ug/L		2.5		SW8260B	10/03/13 13:21 / jrj
Xylenes, Total	ND	ug/L		2.5		SW8260B	10/03/13 13:21 / jrj
Surr: 1,2-Dichloroethane-d4	89.0	%REC		70-130		SW8260B	10/03/13 13:21 / jrj
Surr: Dibromofluoromethane	95.0	%REC		77-126		SW8260B	10/03/13 13:21 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	10/03/13 13:21 / jrj
Surr: Toluene-d8	107	%REC		79-122		SW8260B	10/03/13 13:21 / jrj
- The reporting limit reflects a 5 times dilution. The sample was diluted due to foaming.							
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 15:02 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092542-002
Client Sample ID M-28

Report Date: 10/11/13
Collection Date: 09/25/13 14:42
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4920	mg/L		10		A2540 C	09/28/13 14:52 / qej
INORGANICS							
Chloride	750	mg/L	D	5		E300.0	10/02/13 12:29 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/03/13 12:54 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/03/13 12:54 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/03/13 12:54 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/03/13 12:54 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/03/13 12:54 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/03/13 12:54 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/03/13 12:54 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/03/13 12:54 / jrj
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/03/13 12:54 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	10/03/13 12:54 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:55 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092542-003
Client Sample ID PNR-5

Report Date: 10/11/13
Collection Date: 09/25/13 16:16
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5030	mg/L		10		A2540 C	09/28/13 14:52 / qej
INORGANICS							
Chloride	1330	mg/L	D	10		E300.0	10/02/13 13:14 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092542-004
Client Sample ID PNR-5 DUP

Report Date: 10/11/13
Collection Date: 09/25/13 16:16
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5090	mg/L		10		A2540 C	09/28/13 14:52 / qej
INORGANICS							
Chloride	1320	mg/L	D	10		E300.0	10/02/13 14:00 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092542-005
Client Sample ID PNR-14

Report Date: 10/11/13
Collection Date: 09/25/13 17:37
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	6590	mg/L		10		A2540 C	09/28/13 14:52 / qej
INORGANICS							
Chloride	1860	mg/L	D	10		E300.0	10/02/13 14:15 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092542-006
Client Sample ID PNR-9

Report Date: 10/11/13
Collection Date: 09/26/13 14:15
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	10900	mg/L		10		A2540 C	09/28/13 14:52 / qej
INORGANICS							
Chloride	5670	mg/L	D	20		E300.0	10/02/13 14:30 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Gillette, WY Branch

Client: Geosyntec Consultants
Report Date: 10/11/13
Project: Mesa-Biere 1-22 Well Site
Work Order: B13092542

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: 131010A
Sample ID: MBLK1310100000	Method Blank				Run: BAL-ACCU-124_131010A				10/10/13 14:05
Total Petroleum Hydrocarbons	ND	mg/L	0.7						
Sample ID: LCS1310100000	Laboratory Control Sample				Run: BAL-ACCU-124_131010A				10/10/13 14:06
Total Petroleum Hydrocarbons	15	mg/L	5.0	74	64	132			
Sample ID: LCSD1310100000	Laboratory Control Sample Duplicate				Run: BAL-ACCU-124_131010A				10/10/13 14:07
Total Petroleum Hydrocarbons	16	mg/L	5.0	78	64	132	5.9	34	
Sample ID: G13100025-002BMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010A				10/10/13 14:14
Total Petroleum Hydrocarbons	5.3	mg/L	5.0	27	64	132			S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/09/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092542

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS130928A
Sample ID: MBLK3	Method Blank				Run: BAL #11_130928A				09/28/13 14:51
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS3	Laboratory Control Sample				Run: BAL #11_130928A				09/28/13 14:51
Solids, Total Dissolved TDS @ 180 C	2020	mg/L	10	101	90	110			
Sample ID: B13092489-001A MS	Sample Matrix Spike				Run: BAL #11_130928A				09/28/13 14:51
Solids, Total Dissolved TDS @ 180 C	2720	mg/L	10	101	90	110			
Sample ID: B13092489-002A DUP	Sample Duplicate				Run: BAL #11_130928A				09/28/13 14:51
Solids, Total Dissolved TDS @ 180 C	6000	mg/L	10		90	110	1.7	5	
Method: A2540 C									Batch: TDS131001A
Sample ID: MB-1_131001A	Method Blank				Run: BAL #11_131001A				10/01/13 12:32
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_131001A	Laboratory Control Sample				Run: BAL #11_131001A				10/01/13 12:32
Solids, Total Dissolved TDS @ 180 C	2030	mg/L	10	101	90	110			
Sample ID: B13092547-001A MS	Sample Matrix Spike				Run: BAL #11_131001A				10/01/13 12:33
Solids, Total Dissolved TDS @ 180 C	2490	mg/L	10	99	90	110			
Sample ID: B13092554-001A DUP	Sample Duplicate				Run: BAL #11_131001A				10/01/13 12:34
Solids, Total Dissolved TDS @ 180 C	6060	mg/L	10		90	110	0.4	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/09/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092542

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC202-B_130930A	
Sample ID:	**ICV**	Initial Calibration Verification Standard							09/30/13 13:09	
Chloride		24.4	mg/L	1.0	98	90	110			
Method:	**E300.0**								Batch: R212539	
Sample ID:	**ICB**	Method Blank				Run: IC202-B_130930A			09/30/13 13:24	
Chloride		ND	mg/L	0.04						
Sample ID:	**LFB**	Laboratory Fortified Blank				Run: IC202-B_130930A			09/30/13 13:39	
Chloride		24.6	mg/L	1.0	98	90	110			
Sample ID:	**B13092542-003AMS**	Sample Matrix Spike				Run: IC202-B_130930A			10/02/13 13:29	
Chloride		2520	mg/L	13	95	90	110			
Sample ID:	**B13092542-003AMSD**	Sample Matrix Spike Duplicate				Run: IC202-B_130930A			10/02/13 13:44	
Chloride		2510	mg/L	13	95	90	110	0.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/11/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092542

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212717
Sample ID: lcs100313	Laboratory Control Sample				Run: CS5972A.I_131003A				10/03/13 10:41
Benzene	5.40	ug/L	1.0	108	71	133			
Ethylbenzene	5.80	ug/L	1.0	116	78	131			
Toluene	6.00	ug/L	1.0	120	78	134			
m+p-Xylenes	11.6	ug/L	1.0	116	78	133			
o-Xylene	5.52	ug/L	1.0	110	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	88	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	104	76	127			
Surr: Toluene-d8			1.0	111	79	122			
Sample ID: blk100313	Method Blank				Run: CS5972A.I_131003A				10/03/13 11:34
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	89	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	107	76	127			
Surr: Toluene-d8			1.0	108	79	122			
Sample ID: b13092643-019cms	Sample Matrix Spike				Run: CS5972A.I_131003A				10/03/13 16:55
Benzene	270	ug/L	25	104	71	133			
Ethylbenzene	392	ug/L	25	112	78	131			
Toluene	290	ug/L	25	113	78	134			
m+p-Xylenes	812	ug/L	25	113	78	133			
o-Xylene	334	ug/L	25	106	79	136			
Surr: 1,2-Dichloroethane-d4			50	88	70	130			
Surr: Dibromofluoromethane			50	99	77	126			
Surr: p-Bromofluorobenzene			50	107	76	127			
Surr: Toluene-d8			50	110	79	122			
Sample ID: b13092643-019cmsd	Sample Matrix Spike Duplicate				Run: CS5972A.I_131003A				10/03/13 17:22
Benzene	258	ug/L	25	100	71	133	4.5	20	
Ethylbenzene	376	ug/L	25	106	78	131	4.2	20	
Toluene	268	ug/L	25	104	78	134	7.9	20	
m+p-Xylenes	774	ug/L	25	105	78	133	4.8	20	
o-Xylene	322	ug/L	25	102	79	136	3.7	20	
Surr: 1,2-Dichloroethane-d4			50	88	70	130			
Surr: Dibromofluoromethane			50	98	77	126			
Surr: p-Bromofluorobenzene			50	107	76	127			
Surr: Toluene-d8			50	105	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Geosyntec Consultants

B13092542

Login completed by: Lisa Gancze
Reviewed by: BL2000\lcadreau
Reviewed Date: 9/30/2013

Date Received: 9/27/2013
Received by: lg
Carrier name: Return-UPS Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Temp Blank temperature for Cooler 1 was 1.0°C, Cooler 2 was 1.6°C, Cooler 3 was 1.2°C and Cooler 4 was 2.0°C.

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

Page _____ of _____

PLEASE PRINT (Provide as much information as possible.)

Company Name: GEOSYNTEC

Project Name, PWS, Permit, Etc.: MESA-BIERE 1-22 WELL SITE

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Report Mail Address (Required): 1201 THIRD AVE, SUITE 330 SEATTLE, WA 98101

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Contact Name: CHRISTA TYRRELL Phone/Fax: 406-209-1905 Cell:

Sampler: (Please Print) CT, SW, CL, MJ, CM, MU

Invoice Contact & Phone: CHRISTA TYRRELL 406-209-1905

Purchase Order:

Quote/Bottle Order: 72929

Invoice Address (Required): SAME

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Special Report/Formats:

☐ DW ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☒ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

Standard Turnaround (TAT) — RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Cooler #1 1.0° #2 1.6° #3 1.2° #4 2.0°

Shipped by: Ken Ufford

Cooler ID(s):

Receipt Temp TB °C

On Ice: (Y) N

Custody Seal: On Bottle Y (N); On Cooler (Y) N

Intact (Y) N

Signature Match (Y) N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water)	CL, TDS	BTEX, TPH	SEE ATTACHED	LABORATORY USE ONLY
1	PNR-21	9/26/13	9:11	6W	✓	✓		B309254 2-001
2	M-28	9/25/13	14:42	6W	✓	✓		-002
3	PNR-5	9/25/13	16:16	1W	✓			-003
4	PNR-5 DUP	9/25/13	16:16	1W	✓			-004
5	PNR-14	9/25/13	17:37	1W	✓			-005
6	PNR-9	9/26/13	14:15	1W	✓			-006
7								
8								
9								
10								

Custody Record MUST be Signed

Relinquished by (print): C. TYRRELL Date/Time: 9/26/13 1530 Signature:

Relinquished by (print): Date/Time: Signature:

Received by (print): EN ROUTE VIA UPS Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by Laboratory: Date/Time: 9-27-13 11:45 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

BOTTLE ORDER 72929

SHIPPED TO: Geosyntec Consultants

Contact: Christa Tyrrell
c/o Sherman Inn
200 E. Main Street
Wolf Point MT 59201

Phone:

Project: Poplar Biere 1-22 Well Site

Order Created by: Shari Endy
Shipped From: Billings, MT

Ship Date: 9/19/2013
VIA: Ground

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
TDS, Cl (36 Sets)							
1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
TDS, Cl, BTEX, TPH (26 Sets)							
1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
40 mL Clear Glass VOA	3	SW8260B	8260-Volatile Organic Compounds-BTEX		■ HCL	Zero headspace	1
1 Liter Clear Glass Narrow Mouth	2	E1664A	Hydrocarbons, Total Petroleum		☐ H2SO4		1
Trip Blank							
40 mL Clear Glass VOA	1	FIELD	Supplies		■ HCL	Do not open this container. Return with your samples to the lab. Zero headspace	1

■ HNO3 - Nitric Acid ☐ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide
■ ZnAc - Zinc Acetate ■ HCl - Hydrochloric Acid ☐ H3PO4 - Phosphoric Acid

We strongly suggest that the samples are shipped the same day as they are collected.

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets
Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ANALYTICAL SUMMARY REPORT

October 11, 2013

Geosyntec Consultants
1201 3rd Ave Ste 330
Seattle, WA 98101-3065

Workorder No.: B13092554

Project Name: Mesa-Biere 1-22 Well Site

Energy Laboratories Inc Billings MT received the following 3 samples for Geosyntec Consultants on 9/27/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B13092554-001	M-60	09/26/13 12:30	09/27/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092554-002	PNR-23	09/26/13 11:49	09/27/13	Aqueous	Same As Above
B13092554-003	PNR-24	09/26/13 12:43	09/27/13	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Sample Delivery Group: B13092554

Report Date: 10/11/13

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092554-001
Client Sample ID M-60

Report Date: 10/11/13
Collection Date: 09/26/13 12:30
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	6080	mg/L		10		A2540 C	10/01/13 12:34 / pjw
INORGANICS							
Chloride	2920	mg/L	D	10		E300.0	10/02/13 20:51 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/03/13 12:01 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/03/13 12:01 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/03/13 12:01 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/03/13 12:01 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/03/13 12:01 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/03/13 12:01 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/03/13 12:01 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/03/13 12:01 / jrj
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/03/13 12:01 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	10/03/13 12:01 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:58 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092554-002
Client Sample ID PNR-23

Report Date: 10/11/13
Collection Date: 09/26/13 11:49
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4300	mg/L		10		A2540 C	10/01/13 12:35 / pjw
INORGANICS							
Chloride	915	mg/L	D	5		E300.0	10/02/13 21:06 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.40	ug/L	J	1.0		SW8260B	10/03/13 12:28 / jrj
Ethylbenzene	0.32	ug/L	J	1.0		SW8260B	10/03/13 12:28 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/03/13 12:28 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/03/13 12:28 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/03/13 12:28 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/03/13 12:28 / jrj
Surr: 1,2-Dichloroethane-d4	92.0	%REC		70-130		SW8260B	10/03/13 12:28 / jrj
Surr: Dibromofluoromethane	95.0	%REC		77-126		SW8260B	10/03/13 12:28 / jrj
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/03/13 12:28 / jrj
Surr: Toluene-d8	111	%REC		79-122		SW8260B	10/03/13 12:28 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:57 / eli-g

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092554-003
Client Sample ID PNR-24

Report Date: 10/11/13
Collection Date: 09/26/13 12:43
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4790	mg/L		10		A2540 C	10/01/13 12:35 / pjw
INORGANICS							
Chloride	994	mg/L	D	5		E300.0	10/02/13 21:52 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.76	ug/L	J	1.0		SW8260B	10/03/13 16:02 / jrj
Ethylbenzene	0.37	ug/L	J	1.0		SW8260B	10/03/13 16:02 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/03/13 16:02 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/03/13 16:02 / jrj
o-Xylene	0.81	ug/L	J	1.0		SW8260B	10/03/13 16:02 / jrj
Xylenes, Total	0.81	ug/L	J	1.0		SW8260B	10/03/13 16:02 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/03/13 16:02 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/03/13 16:02 / jrj
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	10/03/13 16:02 / jrj
Surr: Toluene-d8	107	%REC		79-122		SW8260B	10/03/13 16:02 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	1	mg/L		1		E1664A	10/10/13 14:53 / eli-g

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

QA/QC Summary Report

Prepared by Gillette, WY Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site

Report Date: 10/11/13
Work Order: B13092554

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: 131010A
Sample ID: MBLK1310100000	Method Blank				Run: BAL-ACCU-124_131010A				10/10/13 14:05
Total Petroleum Hydrocarbons	ND	mg/L	0.7						
Sample ID: LCS1310100000	Laboratory Control Sample				Run: BAL-ACCU-124_131010A				10/10/13 14:06
Total Petroleum Hydrocarbons	15	mg/L	5.0	74	64	132			
Sample ID: LCSD1310100000	Laboratory Control Sample Duplicate				Run: BAL-ACCU-124_131010A				10/10/13 14:07
Total Petroleum Hydrocarbons	16	mg/L	5.0	78	64	132	5.9	34	
Sample ID: G13100025-002BMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010A				10/10/13 14:14
Total Petroleum Hydrocarbons	5.3	mg/L	5.0	27	64	132			S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site

Report Date: 10/09/13
Work Order: B13092554

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS131001A
Sample ID: MB-1_131001A	Method Blank				Run: BAL #11_131001A				10/01/13 12:32
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_131001A	Laboratory Control Sample				Run: BAL #11_131001A				10/01/13 12:32
Solids, Total Dissolved TDS @ 180 C	2030	mg/L	10	101	90	110			
Sample ID: B13092547-001A MS	Sample Matrix Spike				Run: BAL #11_131001A				10/01/13 12:33
Solids, Total Dissolved TDS @ 180 C	2490	mg/L	10	99	90	110			
Sample ID: B13092554-001A DUP	Sample Duplicate				Run: BAL #11_131001A				10/01/13 12:34
Solids, Total Dissolved TDS @ 180 C	6060	mg/L	10		90	110	0.4	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/09/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092554

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC202-B_130930A	
Sample ID:	**ICV**	Initial Calibration Verification Standard							09/30/13 13:09	
Chloride		24.4	mg/L	1.0	98	90	110			
Method:	**E300.0**								Batch: R212539	
Sample ID:	**ICB**	Method Blank				Run: IC202-B_130930A			09/30/13 13:24	
Chloride		ND	mg/L	0.04						
Sample ID:	**LFB**	Laboratory Fortified Blank				Run: IC202-B_130930A			09/30/13 13:39	
Chloride		24.6	mg/L	1.0	98	90	110			
Sample ID:	**B13092554-003AMS**	Sample Matrix Spike				Run: IC202-B_130930A			10/02/13 22:07	
Chloride		1480	mg/L	5.3	98	90	110			
Sample ID:	**B13092554-003AMSD**	Sample Matrix Spike Duplicate				Run: IC202-B_130930A			10/02/13 22:22	
Chloride		1470	mg/L	5.3	96	90	110	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/11/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092554

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212717
Sample ID: lcs100313	Laboratory Control Sample				Run: CS5972A.I_131003A				10/03/13 10:41
Benzene	5.40	ug/L	1.0	108	71	133			
Ethylbenzene	5.80	ug/L	1.0	116	78	131			
Toluene	6.00	ug/L	1.0	120	78	134			
m+p-Xylenes	11.6	ug/L	1.0	116	78	133			
o-Xylene	5.52	ug/L	1.0	110	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	88	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	104	76	127			
Surr: Toluene-d8			1.0	111	79	122			
Sample ID: blk100313	Method Blank				Run: CS5972A.I_131003A				10/03/13 11:34
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	89	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	107	76	127			
Surr: Toluene-d8			1.0	108	79	122			
Sample ID: b13092643-019cms	Sample Matrix Spike				Run: CS5972A.I_131003A				10/03/13 16:55
Benzene	270	ug/L	25	104	71	133			
Ethylbenzene	392	ug/L	25	112	78	131			
Toluene	290	ug/L	25	113	78	134			
m+p-Xylenes	812	ug/L	25	113	78	133			
o-Xylene	334	ug/L	25	106	79	136			
Surr: 1,2-Dichloroethane-d4			50	88	70	130			
Surr: Dibromofluoromethane			50	99	77	126			
Surr: p-Bromofluorobenzene			50	107	76	127			
Surr: Toluene-d8			50	110	79	122			
Sample ID: b13092643-019cmsd	Sample Matrix Spike Duplicate				Run: CS5972A.I_131003A				10/03/13 17:22
Benzene	258	ug/L	25	100	71	133	4.5	20	
Ethylbenzene	376	ug/L	25	106	78	131	4.2	20	
Toluene	268	ug/L	25	104	78	134	7.9	20	
m+p-Xylenes	774	ug/L	25	105	78	133	4.8	20	
o-Xylene	322	ug/L	25	102	79	136	3.7	20	
Surr: 1,2-Dichloroethane-d4			50	88	70	130			
Surr: Dibromofluoromethane			50	98	77	126			
Surr: p-Bromofluorobenzene			50	107	76	127			
Surr: Toluene-d8			50	105	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Geosyntec Consultants

B13092554

Login completed by: Lisa Gancze
Reviewed by: BL2000\lcadreau
Reviewed Date: 9/30/2013

Date Received: 9/27/2013
Received by: lg
Carrier name: Return-UPS Ground N/C

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Temp Blank temperature for Cooler 1 was 1.0°C, Cooler 2 was 1.6°C, Cooler 3 was 1.2°C and Cooler 4 was 2.0°C.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: GEOSYNTEC

Report Mail Address (Required): 1201 THIRD AVE, SUITE 330 SEATTLE, WA 98101

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Invoice Address (Required): SAME

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Project Name, PWS, Permit, Etc.: MESA BIERE 1-22 WELLSITE

Contact Name: CHRISTA TYRRELL

Phone/Fax: 406-209-1905

Cell:

Invoice Contact & Phone:

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Sampler: (Please Print) CT, SW, CL, MJ, CM, MU

Purchase Order:

Quote/Bottle Order: 72929

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Shipped by: Ken Upshard

Cooler ID(s):

Receipt Temp: °C JB

On Ice: (Y) N

Custody Seal: On Bottle Y (N); On Cooler (Y) N

Intact (Y) N

Signature Match (Y) N

Special Report/Formats:

☐ DW
☐ POTW/WWTP
☐ State: _____
☐ Other: _____
☒ EDD/EDT (Electronic Data) Format: _____
☐ LEVEL IV
☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

SEE ATTACHED

Standard Turnaround (TAT)

RUSH

Comments: Cooler # 1 1.0°, #2 1.6°, #3 1.2°, #4 2.0°

| | SAMPLE IDENTIFICATION (Name, Location, Interval, etc.) | Collection Date | Collection Time | MATRIX | TDS, CL | BTEX, TPH | | |

BOTTLE ORDER 72929

SHIPPED TO: Geosyntec Consultants

Contact: Christa Tyrrell
c/o Sherman Inn
200 E. Main Street
Wolf Point MT 59201

Phone:

Project: Poplar Biere 1-22 Well Site

Order Created by: Shari Endy
Shipped From: Billings, MT

Ship Date: 9/19/2013
VIA: Ground

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
TDS, Cl (36 Sets)							
1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
TDS, Cl, BTEX, TPH (26 Sets)							
1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
40 mL Clear Glass VOA	3	SW8260B	8260-Volatile Organic Compounds-BTEX		■ HCL	Zero headspace	1
1 Liter Clear Glass Narrow Mouth	2	E1664A	Hydrocarbons, Total Petroleum		☐ H2SO4		1
Trip Blank							
40 mL Clear Glass VOA	1	FIELD	Supplies		■ HCL	Do not open this container. Return with your samples to the lab. Zero headspace	1

■ HNO3 - Nitric Acid ▨ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide
■ ZnAc - Zinc Acetate ■ HCl - Hydrochloric Acid ☐ H3PO4 - Phosphoric Acid

We strongly suggest that the samples are shipped the same day as they are collected.

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets
Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ANALYTICAL SUMMARY REPORT

October 11, 2013

Geosyntec Consultants
1201 3rd Ave Ste 330
Seattle, WA 98101-3065

Workorder No.: B13092559

Project Name: Mesa-Biere 1-22 Well Site

Energy Laboratories Inc Billings MT received the following 6 samples for Geosyntec Consultants on 9/27/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B13092559-001	PNR-20-13	09/24/13 17:15	09/27/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092559-002	PNR-7-13	09/25/13 12:17	09/27/13	Aqueous	Same As Above
B13092559-003	PNR-7-13 DUP	09/25/13 12:17	09/27/13	Aqueous	Same As Above
B13092559-004	Trip Blank 1 Lot #091013-B TS SHPO262	09/25/13 14:42	09/27/13	Trip Blank	8260-Volatile Organic Compounds-BTEX
B13092559-005	Trip Blank 2 Lot #091013-B TS SHPO262	09/26/13 11:49	09/27/13	Trip Blank	Same As Above
B13092559-006	Trip Blank 3 Lot #091013-B TS SHPO262	09/24/13 17:15	09/27/13	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Sample Delivery Group: B13092559

Report Date: 10/11/13

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092559-001
Client Sample ID PNR-20-13

Report Date: 10/11/13
Collection Date: 09/24/13 17:15
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	57000	mg/L		10		A2540 C	09/30/13 13:47 / pjw
INORGANICS							
Chloride	21500	mg/L	D	100		E300.0	10/03/13 00:39 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	15	ug/L		1.0		SW8260B	10/02/13 13:44 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 13:44 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 13:44 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 13:44 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 13:44 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 13:44 / jrj
Surr: 1,2-Dichloroethane-d4	86.0	%REC		70-130		SW8260B	10/02/13 13:44 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/02/13 13:44 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	10/02/13 13:44 / jrj
Surr: Toluene-d8	102	%REC		79-122		SW8260B	10/02/13 13:44 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:25 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092559-002
Client Sample ID PNR-7-13

Report Date: 10/11/13
Collection Date: 09/25/13 12:17
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	49300	mg/L		10		A2540 C	10/01/13 12:36 / pjw
INORGANICS							
Chloride	16700	mg/L	D	50		E300.0	10/01/13 16:31 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.58	ug/L	J	1.0		SW8260B	10/02/13 14:13 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 14:13 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 14:13 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 14:13 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 14:13 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 14:13 / jrj
Surr: 1,2-Dichloroethane-d4	86.0	%REC		70-130		SW8260B	10/02/13 14:13 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/02/13 14:13 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	10/02/13 14:13 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	10/02/13 14:13 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:54 / eli-g

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092559-003
Client Sample ID PNR-7-13 DUP

Report Date: 10/11/13
Collection Date: 09/25/13 12:17
DateReceived: 09/27/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	48100	mg/L		10		A2540 C	10/01/13 12:36 / pjw
INORGANICS							
Chloride	18500	mg/L	D	50		E300.0	10/01/13 17:17 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.58	ug/L	J	1.0		SW8260B	10/02/13 14:41 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 14:41 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 14:41 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 14:41 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 14:41 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 14:41 / jrj
Surr: 1,2-Dichloroethane-d4	84.0	%REC		70-130		SW8260B	10/02/13 14:41 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 14:41 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	10/02/13 14:41 / jrj
Surr: Toluene-d8	103	%REC		79-122		SW8260B	10/02/13 14:41 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:41 / eli-g

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092559-004
Client Sample ID Trip Blank 1 Lot #091013-B TS SHPO262

Report Date: 10/11/13
Collection Date: 09/25/13 14:42
DateReceived: 09/27/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 11:28 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 11:28 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 11:28 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 11:28 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 11:28 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 11:28 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/02/13 11:28 / jrj
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	10/02/13 11:28 / jrj
Surr: p-Bromofluorobenzene	113	%REC		76-127		SW8260B	10/02/13 11:28 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	10/02/13 11:28 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092559-005
Client Sample ID Trip Blank 2 Lot #091013-B TS SHPO262

Report Date: 10/11/13
Collection Date: 09/26/13 11:49
DateReceived: 09/27/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 11:55 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 11:55 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 11:55 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 11:55 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 11:55 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 11:55 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/02/13 11:55 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 11:55 / jrj
Surr: p-Bromofluorobenzene	110	%REC		76-127		SW8260B	10/02/13 11:55 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	10/02/13 11:55 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092559-006
Client Sample ID Trip Blank 3 Lot #091013-B TS SHPO262

Report Date: 10/11/13
Collection Date: 09/24/13 17:15
DateReceived: 09/27/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 12:21 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 12:21 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 12:21 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 12:21 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 12:21 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 12:21 / jrj
Surr: 1,2-Dichloroethane-d4	91.0	%REC		70-130		SW8260B	10/02/13 12:21 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 12:21 / jrj
Surr: p-Bromofluorobenzene	112	%REC		76-127		SW8260B	10/02/13 12:21 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	10/02/13 12:21 / jrj

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 Gillette, WY Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site

Report Date: 10/11/13
Work Order: B13092559

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: 131010A
Sample ID: MBLK1310100000	Method Blank				Run: BAL-ACCU-124_131010A				10/10/13 14:05
Total Petroleum Hydrocarbons	ND	mg/L	0.7						
Sample ID: LCS1310100000	Laboratory Control Sample				Run: BAL-ACCU-124_131010A				10/10/13 14:06
Total Petroleum Hydrocarbons	15	mg/L	5.0	74	64	132			
Sample ID: LCSD1310100000	Laboratory Control Sample Duplicate				Run: BAL-ACCU-124_131010A				10/10/13 14:07
Total Petroleum Hydrocarbons	16	mg/L	5.0	78	64	132	5.9	34	
Sample ID: G13100025-002BMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010A				10/10/13 14:14
Total Petroleum Hydrocarbons	5.3	mg/L	5.0	27	64	132			S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/09/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092559

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS130930A	
Sample ID: MB-1_130930A	Method Blank				Run: BAL #11_130930B			09/30/13 13:43	
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_130930A	Laboratory Control Sample				Run: BAL #11_130930B			09/30/13 13:44	
Solids, Total Dissolved TDS @ 180 C	2000	mg/L	10	100	90	110			
Sample ID: B13092549-002A MS	Sample Matrix Spike				Run: BAL #11_130930B			09/30/13 13:46	
Solids, Total Dissolved TDS @ 180 C	2990	mg/L	10	97	90	110			
Sample ID: B13092549-004A DUP	Sample Duplicate				Run: BAL #11_130930B			09/30/13 13:46	
Solids, Total Dissolved TDS @ 180 C	756	mg/L	10		90	110	0.3	5	
Method: A2540 C								Batch: TDS131001A	
Sample ID: MB-1_131001A	Method Blank				Run: BAL #11_131001A			10/01/13 12:32	
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_131001A	Laboratory Control Sample				Run: BAL #11_131001A			10/01/13 12:32	
Solids, Total Dissolved TDS @ 180 C	2030	mg/L	10	101	90	110			
Sample ID: B13092547-001A MS	Sample Matrix Spike				Run: BAL #11_131001A			10/01/13 12:33	
Solids, Total Dissolved TDS @ 180 C	2490	mg/L	10	99	90	110			
Sample ID: B13092554-001A DUP	Sample Duplicate				Run: BAL #11_131001A			10/01/13 12:34	
Solids, Total Dissolved TDS @ 180 C	6060	mg/L	10		90	110	0.4	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/09/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092559

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC203-B_131001A	
Sample ID:	**ICV**	Initial Calibration Verification Standard							10/01/13 11:44	
Chloride		24.1	mg/L	1.0	97	90	110			
Method:	**E300.0**								Batch: R212619	
Sample ID:	**ICB**	Method Blank				Run: IC203-B_131001A			10/01/13 11:59	
Chloride		0.2	mg/L	0.06						
Sample ID:	**LFB**	Laboratory Fortified Blank				Run: IC203-B_131001A			10/01/13 12:14	
Chloride		23.7	mg/L	1.0	94	90	110			
Sample ID:	**B13092559-003AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/01/13 17:32	
Chloride		22700	mg/L	53	85	90	110			S
Sample ID:	**B13092559-003AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/01/13 17:47	
Chloride		22700	mg/L	53	85	90	110	0.0	20	S
Sample ID:	**B13092326-019AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/02/13 23:38	
Chloride		90.6	mg/L	1.0	107	90	110			
Sample ID:	**B13092326-019AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/02/13 23:53	
Chloride		91.0	mg/L	1.0	108	90	110	0.4	20	
Sample ID:	**B13100014-009AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/03/13 09:28	
Chloride		28.1	mg/L	1.0	104	90	110			
Sample ID:	**B13100014-009AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/03/13 09:43	
Chloride		28.1	mg/L	1.0	104	90	110	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/11/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092559

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212625
Sample ID: lcs100213	Laboratory Control Sample				Run: 5971A.I_131002A				10/02/13 09:57
Benzene	4.96	ug/L	1.0	99	71	133			
Ethylbenzene	5.52	ug/L	1.0	110	78	131			
Toluene	5.68	ug/L	1.0	114	78	134			
m+p-Xylenes	11.6	ug/L	1.0	116	78	133			
o-Xylene	5.72	ug/L	1.0	114	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	78	70	130			
Surr: Dibromofluoromethane			1.0	94	77	126			
Surr: p-Bromofluorobenzene			1.0	101	76	127			
Surr: Toluene-d8			1.0	104	79	122			
Sample ID: blk100213	Method Blank				Run: 5971A.I_131002A				10/02/13 10:26
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	78	70	130			
Surr: Dibromofluoromethane			1.0	91	77	126			
Surr: p-Bromofluorobenzene			1.0	102	76	127			
Surr: Toluene-d8			1.0	103	79	122			
Sample ID: b13092553-002ams	Sample Matrix Spike				Run: 5971A.I_131002A				10/02/13 20:22
Benzene	154	ug/L	10	96	71	133			
Ethylbenzene	114	ug/L	10	109	78	131			
Toluene	114	ug/L	10	114	78	134			
m+p-Xylenes	223	ug/L	10	112	78	133			
o-Xylene	114	ug/L	10	114	79	136			
Surr: 1,2-Dichloroethane-d4			20	81	70	130			
Surr: Dibromofluoromethane			20	96	77	126			
Surr: p-Bromofluorobenzene			20	104	76	127			
Surr: Toluene-d8			20	108	79	122			
Sample ID: b13092553-002amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_131002A				10/02/13 20:50
Benzene	151	ug/L	10	93	71	133	2.1	20	
Ethylbenzene	108	ug/L	10	103	78	131	5.8	20	
Toluene	105	ug/L	10	105	78	134	8.8	20	
m+p-Xylenes	210	ug/L	10	105	78	133	6.3	20	
o-Xylene	106	ug/L	10	106	79	136	8.0	20	
Surr: 1,2-Dichloroethane-d4			20	78	70	130			
Surr: Dibromofluoromethane			20	94	77	126			
Surr: p-Bromofluorobenzene			20	103	76	127			
Surr: Toluene-d8			20	107	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site

Report Date: 10/11/13
Work Order: B13092559

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212626
Sample ID: lcs100213	Laboratory Control Sample				Run: CS5972A.I_131002A				10/02/13 10:08
Benzene	5.48	ug/L	1.0	110	71	133			
Ethylbenzene	6.08	ug/L	1.0	122	78	131			
Toluene	6.16	ug/L	1.0	123	78	134			
m+p-Xylenes	12.1	ug/L	1.0	121	78	133			
o-Xylene	5.72	ug/L	1.0	114	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	86	70	130			
Surr: Dibromofluoromethane			1.0	96	77	126			
Surr: p-Bromofluorobenzene			1.0	107	76	127			
Surr: Toluene-d8			1.0	112	79	122			
Sample ID: blk100213	Method Blank				Run: CS5972A.I_131002A				10/02/13 11:01
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	88	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	114	76	127			
Surr: Toluene-d8			1.0	109	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Geosyntec Consultants

B13092559

Login completed by: Lisa Gancze
Reviewed by: BL2000\lcadreau
Reviewed Date: 9/30/2013

Date Received: 9/27/2013
Received by: lg
Carrier name: Return-UPS Ground N/C

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Temp Blank temperature for Cooler 1 was 1.0°C, Cooler 2 was 1.6°C, Cooler 3 was 1.2°C and Cooler 4 was 2.0°C.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: GEOSYNTEC

Project Name, PWS, Permit, Etc.: MESA-BIERE 1-22 WELL SITE

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Report Mail Address (Required): 1201 THIRD AVE, SUITE 330 SEATTLE, WA 98101

Contact Name: CHRISTA TYRRELL Phone/Fax: 406.209.1905 Cell:

Sampler: (Please Print) CT, SW, CL, MJ, CM, MH

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Invoice Contact & Phone: CHRISTA TYRRELL 406.209.1905

Purchase Order:

Quote/Bottle Order: 72929

Invoice Address (Required): SAME

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Special Report/Formats:

☐ DW
☐ POTW/WWTP
☐ State: _____
☐ Other: _____
☒ EDD/EDT (Electronic Data) Format: _____
☐ LEVEL IV
☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	TDS, CL	BTEX, TPH	SEE ATTACHED
3 PNR-20-13	9/24/13	17:15	GW	✓	✓	
3 PNR-7-13	9/25/13	12:17	GW	✓	✓	
3 PNR-7-13 DUP	9/25/13	12:17	GW	✓	✓	
4						
5 TB1 091013-B	TS SHP0262					
6 TB2 091013-B	TS SHP0262					
7 TB3 091013-B	TS SHP0262					
8						
9						
10						

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Cooler #1 1.0° #2 1.6° #3 1.2° #4 2.0

Shipped by: RUSH UPS GRD

Cooler ID(s):

Receipt Temp TB °C

On Ice: (Y) N

Custody Seal On Bottle Y (N) On Cooler (Y) N

Intact (Y) N

Signature Match (Y) N

LABORATORY USE ONLY: B309259-001, -002, -003, -004, -005, -006

Custody Record MUST be Signed

Relinquished by (print): CHRISTA TYRRELL Date/Time: 9/26/13 1530 Signature:

Received by (print): EN ROUTE VIA UPS Date/Time: Signature:

Relinquished by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by Laboratory: Date/Time: 9-27-13 11:45 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

BOTTLE ORDER 72929

SHIPPED TO: Geosyntec Consultants

Contact: Christa Tyrrell
c/o Sherman Inn
200 E. Main Street
Wolf Point MT 59201

Phone:

Project: Poplar Biere 1-22 Well Site

Order Created by: Shari Endy
Shipped From: Billings, MT

Ship Date: 9/19/2013
VIA: Ground

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
TDS, Cl (36 Sets)							
1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
TDS, Cl, BTEX, TPH (26 Sets)							
1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
40 mL Clear Glass VOA	3	SW8260B	8260-Volatile Organic Compounds-BTEX		■ HCL	Zero headspace	1
1 Liter Clear Glass Narrow Mouth	2	E1664A	Hydrocarbons, Total Petroleum		☐ H2SO4		1
Trip Blank							
40 mL Clear Glass VOA	1	FIELD	Supplies		■ HCL	Do not open this container. Return with your samples to the lab. Zero headspace	1

■ HNO3 - Nitric Acid ☐ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide
■ ZnAc - Zinc Acetate ■ HCl - Hydrochloric Acid ☐ H3PO4 - Phosphoric Acid

We strongly suggest that the samples are shipped the same day as they are collected.

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets
Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ANALYTICAL SUMMARY REPORT

October 14, 2013

Geosyntec Consultants
1201 3rd Ave Ste 330
Seattle, WA 98101-3065

Workorder No.: B13092643

Project Name: Mesa-Biere 1-22 Well Site

Energy Laboratories Inc Billings MT received the following 35 samples for Geosyntec Consultants on 9/30/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B13092643-001	PNR-RW-05	09/27/13 10:17	09/30/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092643-002	PNR-RW-03	09/27/13 10:52	09/30/13	Aqueous	Same As Above
B13092643-003	M-27	09/27/13 9:20	09/30/13	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B13092643-004	PNR-10DUP	09/27/13 12:16	09/30/13	Aqueous	Same As Above
B13092643-005	PNR-10	09/27/13 12:16	09/30/13	Aqueous	Same As Above
B13092643-006	PNR-38-08	09/27/13 14:41	09/30/13	Aqueous	Same As Above
B13092643-007	PNR-22	09/27/13 10:43	09/30/13	Aqueous	Same As Above
B13092643-008	MOC-4	09/27/13 16:50	09/30/13	Aqueous	Same As Above
B13092643-009	PNR-13	09/26/13 9:31	09/30/13	Aqueous	Same As Above
B13092643-010	PNR-40-12	09/26/13 16:41	09/30/13	Aqueous	Same As Above
B13092643-011	PNR-RW-04	09/27/13 10:36	09/30/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092643-012	M-31-13	09/26/13 16:12	09/30/13	Aqueous	Same As Above
B13092643-013	PNR-RW-06	09/27/13 9:12	09/30/13	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B13092643-014	PNR-RW-08	09/27/13 9:32	09/30/13	Aqueous	Same As Above
B13092643-015	PNR-RW-09	09/27/13 9:44	09/30/13	Aqueous	Same As Above
B13092643-016	PNR-RW-12	09/27/13 10:01	09/30/13	Aqueous	Same As Above
B13092643-017	PNR-RW-11	09/27/13 11:52	09/30/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092643-018	PNR-RW-01	09/27/13 12:10	09/30/13	Aqueous	Same As Above
B13092643-019	PNR-RW-10	09/27/13 12:23	09/30/13	Aqueous	Same As Above
B13092643-020	PNR-RW-02	09/27/13 11:11	09/30/13	Aqueous	Same As Above
B13092643-021	PNR-RW-13	09/28/13 8:05	09/30/13	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

B13092643-022	PNR-RW-13DUP	09/28/13 8:05	09/30/13	Aqueous	Same As Above
B13092643-023	PNR-8	09/29/13 10:15	09/30/13	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B13092643-024	PNR-8DUP	09/29/13 10:15	09/30/13	Aqueous	Same As Above
B13092643-025	PNR-100	09/29/13 10:28	09/30/13	Aqueous	Same As Above
B13092643-026	PNR-100	09/28/13 13:45	09/30/13	Aqueous	8260-Volatile Organic Compounds-BTEX
B13092643-027	PNR-39-08	09/28/13 14:48	09/30/13	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B13092643-028	PNR-28	09/28/13 11:34	09/30/13	Aqueous	Same As Above
B13092643-029	PNR-19	09/28/13 12:46	09/30/13	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B13092643-030	Trip Blank 1 Lot091013 B-TS SHP0262	09/28/13 12:46	09/30/13	Trip Blank	8260-Volatile Organic Compounds-BTEX
B13092643-031	Trip Blank 2 Lot091013 B-TS SHP0262	09/26/13 16:12	09/30/13	Trip Blank	Same As Above
B13092643-032	Trip Blank 3A Lot091013 B-TS SHP0262	09/27/13 11:52	09/30/13	Trip Blank	Same As Above
B13092643-033	Trip Blank 3B Lot091013 B-TS SHP0262	09/27/13 11:52	09/30/13	Trip Blank	Same As Above
B13092643-034	Trip Blank 4 Lot091013 B-TS SHP0262	09/28/13 8:05	09/30/13	Trip Blank	Same As Above
B13092643-035	Trip Blank 6 Lot091013 B-TS SHP0262	09/27/13 10:17	09/30/13	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Sample Delivery Group: B13092643

Report Date: 10/14/13

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-001
Client Sample ID PNR-RW-05

Report Date: 10/14/13
Collection Date: 09/27/13 10:17
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	8950	mg/L		10		A2540 C	10/01/13 15:36 / pjw
INORGANICS							
Chloride	3450	mg/L	D	20		E300.0	10/02/13 09:10 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.15	ug/L	J	1.0		SW8260B	10/02/13 15:10 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 15:10 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 15:10 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 15:10 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 15:10 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 15:10 / jrj
Surr: 1,2-Dichloroethane-d4	78.0	%REC		70-130		SW8260B	10/02/13 15:10 / jrj
Surr: Dibromofluoromethane	93.0	%REC		77-126		SW8260B	10/02/13 15:10 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	10/02/13 15:10 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	10/02/13 15:10 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:39 / eli-g

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-002
Client Sample ID PNR-RW-03

Report Date: 10/14/13
Collection Date: 09/27/13 10:52
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	38500	mg/L		10		A2540 C	10/01/13 15:36 / pjw
INORGANICS							
Chloride	13000	mg/L	D	50		E300.0	10/02/13 09:25 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	3.8	ug/L		1.0		SW8260B	10/02/13 15:38 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 15:38 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 15:38 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 15:38 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 15:38 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 15:38 / jrj
Surr: 1,2-Dichloroethane-d4	81.0	%REC		70-130		SW8260B	10/02/13 15:38 / jrj
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	10/02/13 15:38 / jrj
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	10/02/13 15:38 / jrj
Surr: Toluene-d8	101	%REC		79-122		SW8260B	10/02/13 15:38 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:13 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-003
Client Sample ID M-27

Report Date: 10/14/13
Collection Date: 09/27/13 09:20
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	11500	mg/L		10		A2540 C	10/01/13 15:36 / pjw
INORGANICS							
Chloride	6380	mg/L	D	20		E300.0	10/02/13 09:40 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-004
Client Sample ID PNR-10DUP

Report Date: 10/14/13
Collection Date: 09/27/13 12:16
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5450	mg/L		10		A2540 C	10/01/13 15:35 / pjw
INORGANICS							
Chloride	1810	mg/L	D	10		E300.0	10/02/13 09:55 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-005
Client Sample ID PNR-10

Report Date: 10/14/13
Collection Date: 09/27/13 12:16
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5500	mg/L		10		A2540 C	10/01/13 15:37 / pjw
INORGANICS							
Chloride	2110	mg/L	D	10		E300.0	10/02/13 10:10 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-006
Client Sample ID PNR-38-08

Report Date: 10/14/13
Collection Date: 09/27/13 14:41
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5390	mg/L		10		A2540 C	10/01/13 15:37 / pjw
INORGANICS							
Chloride	2070	mg/L	D	10		E300.0	10/02/13 10:25 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-007
Client Sample ID PNR-22

Report Date: 10/14/13
Collection Date: 09/27/13 10:43
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4290	mg/L		10		A2540 C	10/01/13 15:37 / pjw
INORGANICS							
Chloride	593	mg/L	D	5		E300.0	10/02/13 11:11 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-008
Client Sample ID MOC-4

Report Date: 10/14/13
Collection Date: 09/27/13 16:50
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5480	mg/L		10		A2540 C	10/01/13 15:38 / pjw
INORGANICS							
Chloride	2340	mg/L	D	10		E300.0	10/02/13 11:56 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-009
Client Sample ID PNR-13

Report Date: 10/14/13
Collection Date: 09/26/13 09:31
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3360	mg/L		10		A2540 C	10/01/13 15:38 / pjw
INORGANICS							
Chloride	84	mg/L	D	2		E300.0	10/02/13 12:11 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-010
Client Sample ID PNR-40-12

Report Date: 10/14/13
Collection Date: 09/26/13 16:41
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	7080	mg/L		10		A2540 C	10/01/13 15:38 / pjw
INORGANICS							
Chloride	188	mg/L	D	5		E300.0	10/02/13 12:26 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-011
Client Sample ID PNR-RW-04

Report Date: 10/14/13
Collection Date: 09/27/13 10:36
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	14000	mg/L		10		A2540 C	10/01/13 15:39 / pjw
INORGANICS							
Chloride	6670	mg/L	D	20		E300.0	10/02/13 12:41 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	1.5	ug/L		1.0		SW8260B	10/02/13 16:06 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 16:06 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 16:06 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 16:06 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 16:06 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 16:06 / jrj
Surr: 1,2-Dichloroethane-d4	80.0	%REC		70-130		SW8260B	10/02/13 16:06 / jrj
Surr: Dibromofluoromethane	95.0	%REC		77-126		SW8260B	10/02/13 16:06 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	10/02/13 16:06 / jrj
Surr: Toluene-d8	105	%REC		79-122		SW8260B	10/02/13 16:06 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:40 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-012
Client Sample ID M-31-13

Report Date: 10/14/13
Collection Date: 09/26/13 16:12
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	30700	mg/L		10		A2540 C	10/01/13 15:39 / pjw
INORGANICS							
Chloride	11800	mg/L	D	50		E300.0	10/02/13 12:56 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	8.0	ug/L		1.0		SW8260B	10/02/13 16:35 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 16:35 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 16:35 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 16:35 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 16:35 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 16:35 / jrj
Surr: 1,2-Dichloroethane-d4	82.0	%REC		70-130		SW8260B	10/02/13 16:35 / jrj
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	10/02/13 16:35 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	10/02/13 16:35 / jrj
Surr: Toluene-d8	103	%REC		79-122		SW8260B	10/02/13 16:35 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:38 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-013
Client Sample ID PNR-RW-06

Report Date: 10/14/13
Collection Date: 09/27/13 09:12
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	15200	mg/L		10		A2540 C	10/01/13 15:39 / pjw
INORGANICS							
Chloride	7290	mg/L	D	20		E300.0	10/02/13 13:12 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-014
Client Sample ID PNR-RW-08

Report Date: 10/14/13
Collection Date: 09/27/13 09:32
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	17600	mg/L		10		A2540 C	10/01/13 15:40 / pjw
INORGANICS							
Chloride	8710	mg/L	D	20		E300.0	10/02/13 13:27 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-015
Client Sample ID PNR-RW-09

Report Date: 10/14/13
Collection Date: 09/27/13 09:44
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	6920	mg/L		10		A2540 C	10/01/13 15:40 / pjw
INORGANICS							
Chloride	2590	mg/L	D	10		E300.0	10/02/13 13:42 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-016
Client Sample ID PNR-RW-12

Report Date: 10/14/13
Collection Date: 09/27/13 10:01
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	31400	mg/L		10		A2540 C	10/02/13 09:58 / pjw
INORGANICS							
Chloride	9950	mg/L	D	50		E300.0	10/02/13 14:28 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-017
Client Sample ID PNR-RW-11

Report Date: 10/14/13
Collection Date: 09/27/13 11:52
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	19800	mg/L		10		A2540 C	10/01/13 15:41 / pjw
INORGANICS							
Chloride	11300	mg/L	D	50		E300.0	10/03/13 02:09 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	5.8	ug/L		1.0		SW8260B	10/02/13 17:03 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 17:03 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 17:03 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 17:03 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 17:03 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 17:03 / jrj
Surr: 1,2-Dichloroethane-d4	81.0	%REC		70-130		SW8260B	10/02/13 17:03 / jrj
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	10/02/13 17:03 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	10/02/13 17:03 / jrj
Surr: Toluene-d8	105	%REC		79-122		SW8260B	10/02/13 17:03 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:28 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-018
Client Sample ID PNR-RW-01

Report Date: 10/14/13
Collection Date: 09/27/13 12:10
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	28700	mg/L		10		A2540 C	10/02/13 09:56 / pjw
INORGANICS							
Chloride	9850	mg/L	D	50		E300.0	10/03/13 02:55 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	3.5	ug/L		1.0		SW8260B	10/02/13 17:31 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 17:31 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 17:31 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 17:31 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 17:31 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 17:31 / jrj
Surr: 1,2-Dichloroethane-d4	81.0	%REC		70-130		SW8260B	10/02/13 17:31 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 17:31 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	10/02/13 17:31 / jrj
Surr: Toluene-d8	101	%REC		79-122		SW8260B	10/02/13 17:31 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:19 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-019
Client Sample ID PNR-RW-10

Report Date: 10/14/13
Collection Date: 09/27/13 12:23
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3460	mg/L		10		A2540 C	10/02/13 09:56 / pjw
INORGANICS							
Chloride	232	mg/L	D	5		E300.0	10/03/13 03:10 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	8.5	ug/L		2.5		SW8260B	10/03/13 13:48 / jrj
Ethylbenzene	111	ug/L		25		SW8260B	10/03/13 16:28 / jrj
Toluene	7.6	ug/L		2.5		SW8260B	10/03/13 13:48 / jrj
m+p-Xylenes	248	ug/L		25		SW8260B	10/03/13 16:28 / jrj
o-Xylene	72	ug/L		2.5		SW8260B	10/03/13 13:48 / jrj
Xylenes, Total	320	ug/L		2.5		SW8260B	10/03/13 13:48 / jrj
Surr: 1,2-Dichloroethane-d4	88.0	%REC		70-130		SW8260B	10/03/13 13:48 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/03/13 13:48 / jrj
Surr: p-Bromofluorobenzene	111	%REC		76-127		SW8260B	10/03/13 13:48 / jrj
Surr: Toluene-d8	109	%REC		79-122		SW8260B	10/03/13 13:48 / jrj
- The sample was received in the laboratory with a pH > 2. The pH was 7.							
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	2	mg/L		1		E1664A	10/10/13 15:02 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-020
Client Sample ID PNR-RW-02

Report Date: 10/14/13
Collection Date: 09/27/13 11:11
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	30500	mg/L		10		A2540 C	10/02/13 09:56 / pjw
INORGANICS							
Chloride	10700	mg/L	D	50		E300.0	10/03/13 03:25 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	3.7	ug/L		1.0		SW8260B	10/02/13 18:01 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 18:01 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 18:01 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 18:01 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 18:01 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 18:01 / jrj
Surr: 1,2-Dichloroethane-d4	82.0	%REC		70-130		SW8260B	10/02/13 18:01 / jrj
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	10/02/13 18:01 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	10/02/13 18:01 / jrj
Surr: Toluene-d8	105	%REC		79-122		SW8260B	10/02/13 18:01 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:39 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-021
Client Sample ID PNR-RW-13

Report Date: 10/14/13
Collection Date: 09/28/13 08:05
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	21600	mg/L		10		A2540 C	10/02/13 09:57 / pjw
INORGANICS							
Chloride	9510	mg/L	D	50		E300.0	10/03/13 03:40 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	4.2	ug/L		1.0		SW8260B	10/02/13 18:28 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 18:28 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 18:28 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 18:28 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 18:28 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 18:28 / jrj
Surr: 1,2-Dichloroethane-d4	79.0	%REC		70-130		SW8260B	10/02/13 18:28 / jrj
Surr: Dibromofluoromethane	95.0	%REC		77-126		SW8260B	10/02/13 18:28 / jrj
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	10/02/13 18:28 / jrj
Surr: Toluene-d8	104	%REC		79-122		SW8260B	10/02/13 18:28 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:21 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-022
Client Sample ID PNR-RW-13DUP

Report Date: 10/14/13
Collection Date: 09/28/13 08:05
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	25000	mg/L		10		A2540 C	10/02/13 09:57 / pjw
INORGANICS							
Chloride	9910	mg/L	D	50		E300.0	10/03/13 03:55 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	4.2	ug/L		1.0		SW8260B	10/02/13 18:57 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 18:57 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 18:57 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 18:57 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 18:57 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 18:57 / jrj
Surr: 1,2-Dichloroethane-d4	80.0	%REC		70-130		SW8260B	10/02/13 18:57 / jrj
Surr: Dibromofluoromethane	94.0	%REC		77-126		SW8260B	10/02/13 18:57 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	10/02/13 18:57 / jrj
Surr: Toluene-d8	103	%REC		79-122		SW8260B	10/02/13 18:57 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:27 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-023
Client Sample ID PNR-8

Report Date: 10/14/13
Collection Date: 09/29/13 10:15
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2800	mg/L		10		A2540 C	10/02/13 09:57 / pjw
INORGANICS							
Chloride	455	mg/L	D	5		E300.0	10/03/13 04:10 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-024
Client Sample ID PNR-8DUP

Report Date: 10/14/13
Collection Date: 09/29/13 10:15
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2820	mg/L		10		A2540 C	10/02/13 09:57 / pjw
INORGANICS							
Chloride	463	mg/L	D	5		E300.0	10/03/13 04:26 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-025
Client Sample ID PNR-100

Report Date: 10/14/13
Collection Date: 09/29/13 10:28
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	483	mg/L		10		A2540 C	10/02/13 09:55 / pjw
INORGANICS							
Chloride	20	mg/L		1		E300.0	10/03/13 04:41 / jrs

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-026
Client Sample ID PNR-100

Report Date: 10/14/13
Collection Date: 09/28/13 13:45
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 19:25 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 19:25 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 19:25 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 19:25 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 19:25 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 19:25 / jrj
Surr: 1,2-Dichloroethane-d4	80.0	%REC		70-130		SW8260B	10/02/13 19:25 / jrj
Surr: Dibromofluoromethane	99.0	%REC		77-126		SW8260B	10/02/13 19:25 / jrj
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	10/02/13 19:25 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	10/02/13 19:25 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-027
Client Sample ID PNR-39-08

Report Date: 10/14/13
Collection Date: 09/28/13 14:48
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	12400	mg/L		10		A2540 C	10/02/13 09:58 / pjw
INORGANICS							
Chloride	5890	mg/L	D	20		E300.0	10/03/13 04:56 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-028
Client Sample ID PNR-28

Report Date: 10/14/13
Collection Date: 09/28/13 11:34
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	17900	mg/L		10		A2540 C	10/02/13 09:59 / pjw
INORGANICS							
Chloride	8780	mg/L	D	20		E300.0	10/03/13 05:41 / jrs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-029
Client Sample ID PNR-19

Report Date: 10/14/13
Collection Date: 09/28/13 12:46
DateReceived: 09/30/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4760	mg/L		10		A2540 C	10/02/13 09:58 / pjw
INORGANICS							
Chloride	1270	mg/L	D	5		E300.0	10/03/13 06:26 / jrs
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.40	ug/L	J	1.0		SW8260B	10/02/13 19:53 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 19:53 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 19:53 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 19:53 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 19:53 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 19:53 / jrj
Surr: 1,2-Dichloroethane-d4	77.0	%REC		70-130		SW8260B	10/02/13 19:53 / jrj
Surr: Dibromofluoromethane	92.0	%REC		77-126		SW8260B	10/02/13 19:53 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	10/02/13 19:53 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	10/02/13 19:53 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	10/10/13 14:28 / eli-g

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-030
Client Sample ID Trip Blank 1 Lot091013 B-TS SHP0262

Report Date: 10/14/13
Collection Date: 09/28/13 12:46
DateReceived: 09/30/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 12:48 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 12:48 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 12:48 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 12:48 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 12:48 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 12:48 / jrj
Surr: 1,2-Dichloroethane-d4	89.0	%REC		70-130		SW8260B	10/02/13 12:48 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/02/13 12:48 / jrj
Surr: p-Bromofluorobenzene	115	%REC		76-127		SW8260B	10/02/13 12:48 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	10/02/13 12:48 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-031
Client Sample ID Trip Blank 2 Lot091013 B-TS SHP0262

Report Date: 10/14/13
Collection Date: 09/26/13 16:12
DateReceived: 09/30/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 13:15 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 13:15 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 13:15 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 13:15 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 13:15 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 13:15 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/02/13 13:15 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 13:15 / jrj
Surr: p-Bromofluorobenzene	119	%REC		76-127		SW8260B	10/02/13 13:15 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	10/02/13 13:15 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-032
Client Sample ID Trip Blank 3A Lot091013 B-TS SHP0262

Report Date: 10/14/13
Collection Date: 09/27/13 11:52
DateReceived: 09/30/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 13:42 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 13:42 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 13:42 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 13:42 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 13:42 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 13:42 / jrj
Surr: 1,2-Dichloroethane-d4	89.0	%REC		70-130		SW8260B	10/02/13 13:42 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 13:42 / jrj
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/02/13 13:42 / jrj
Surr: Toluene-d8	107	%REC		79-122		SW8260B	10/02/13 13:42 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-033
Client Sample ID Trip Blank 3B Lot091013 B-TS SHP0262

Report Date: 10/14/13
Collection Date: 09/27/13 11:52
DateReceived: 09/30/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 14:09 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 14:09 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 14:09 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 14:09 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 14:09 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 14:09 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/02/13 14:09 / jrj
Surr: Dibromofluoromethane	97.0	%REC		77-126		SW8260B	10/02/13 14:09 / jrj
Surr: p-Bromofluorobenzene	113	%REC		76-127		SW8260B	10/02/13 14:09 / jrj
Surr: Toluene-d8	109	%REC		79-122		SW8260B	10/02/13 14:09 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-034
Client Sample ID Trip Blank 4 Lot091013 B-TS SHP0262

Report Date: 10/14/13
Collection Date: 09/28/13 08:05
DateReceived: 09/30/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 14:35 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 14:35 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 14:35 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 14:35 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 14:35 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 14:35 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/02/13 14:35 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/02/13 14:35 / jrj
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/02/13 14:35 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	10/02/13 14:35 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants
Project: Mesa-Biere 1-22 Well Site
Lab ID: B13092643-035
Client Sample ID Trip Blank 6 Lot091013 B-TS SHP0262

Report Date: 10/14/13
Collection Date: 09/27/13 10:17
DateReceived: 09/30/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	10/02/13 15:02 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/02/13 15:02 / jrj
Toluene	ND	ug/L		1.0		SW8260B	10/02/13 15:02 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/02/13 15:02 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	10/02/13 15:02 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/02/13 15:02 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	10/02/13 15:02 / jrj
Surr: Dibromofluoromethane	99.0	%REC		77-126		SW8260B	10/02/13 15:02 / jrj
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/02/13 15:02 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	10/02/13 15:02 / jrj

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 Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/10/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092643

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS131001B
Sample ID: MB-1_131001B	Method Blank				Run: BAL #11_131001C				10/01/13 15:33
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_131001B	Laboratory Control Sample				Run: BAL #11_131001C				10/01/13 15:33
Solids, Total Dissolved TDS @ 180 C	1990	mg/L	10	99	90	110			
Sample ID: B13092572-001A MS	Sample Matrix Spike				Run: BAL #11_131001C				10/01/13 15:35
Solids, Total Dissolved TDS @ 180 C	2280	mg/L	10	97	90	110			
Sample ID: B13092643-004A DUP	Sample Duplicate				Run: BAL #11_131001C				10/01/13 15:35
Solids, Total Dissolved TDS @ 180 C	5480	mg/L	10		90	110	0.6	5	
Sample ID: B13092643-010A DUP	Sample Duplicate				Run: BAL #11_131001C				10/01/13 15:38
Solids, Total Dissolved TDS @ 180 C	7130	mg/L	10		90	110	0.6	5	
Method: A2540 C									Batch: TDS131002A
Sample ID: MB-1_131002A	Method Blank				Run: BAL #11_131002A				10/02/13 09:53
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LCS-2_131002A	Laboratory Control Sample				Run: BAL #11_131002A				10/02/13 09:54
Solids, Total Dissolved TDS @ 180 C	1990	mg/L	10	100	90	110			
Sample ID: B13092643-025A MS	Sample Matrix Spike				Run: BAL #11_131002A				10/02/13 09:55
Solids, Total Dissolved TDS @ 180 C	2460	mg/L	10	99	90	110			
Sample ID: B13092643-019A DUP	Sample Duplicate				Run: BAL #11_131002A				10/02/13 09:56
Solids, Total Dissolved TDS @ 180 C	3440	mg/L	10		90	110	0.5	5	
Sample ID: B13092643-029A DUP	Sample Duplicate				Run: BAL #11_131002A				10/02/13 09:59
Solids, Total Dissolved TDS @ 180 C	4790	mg/L	10		90	110	0.5	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/10/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092643

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC203-B_131001A	
Sample ID:	**ICV**	Initial Calibration Verification Standard							10/01/13 11:44	
Chloride		24.1	mg/L	1.0	97	90	110			
Sample ID:	**ICV**	Initial Calibration Verification Standard							10/02/13 17:51	
Chloride		24.9	mg/L	1.0	100	90	110			
Method:	**E300.0**								Batch: R212619	
Sample ID:	**ICB**	Method Blank				Run: IC203-B_131001A			10/01/13 11:59	
Chloride		0.2	mg/L	0.06						
Sample ID:	**LFB**	Laboratory Fortified Blank				Run: IC203-B_131001A			10/01/13 12:14	
Chloride		23.7	mg/L	1.0	94	90	110			
Sample ID:	**B13092619-022AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/02/13 07:38	
Chloride		561	mg/L	1.3	83	90	110			S
Sample ID:	**B13092619-022AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/02/13 07:53	
Chloride		555	mg/L	1.3	78	90	110	1.0	20	S
Sample ID:	**B13092643-007AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/02/13 11:26	
Chloride		1080	mg/L	5.3	97	90	110			
Sample ID:	**B13092643-007AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/02/13 11:41	
Chloride		1080	mg/L	5.3	97	90	110	0.1	20	
Sample ID:	**B13092160-001AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/02/13 15:29	
Chloride		52.1	mg/L	1.0	111	90	110			S
Sample ID:	**B13092160-001AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/02/13 15:44	
Chloride		52.7	mg/L	1.0	114	90	110	1.3	20	S
Sample ID:	**B13092643-017AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/03/13 02:25	
Chloride		16100	mg/L	53	97	90	110			
Sample ID:	**B13092643-017AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/03/13 02:40	
Chloride		16200	mg/L	53	99	90	110	0.5	20	
Sample ID:	**B13092643-028AMS**	Sample Matrix Spike				Run: IC203-B_131001A			10/03/13 05:56	
Chloride		10500	mg/L	26	67	90	110			S
Sample ID:	**B13092643-028AMSD**	Sample Matrix Spike Duplicate				Run: IC203-B_131001A			10/03/13 06:11	
Chloride		10400	mg/L	26	65	90	110	0.6	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/14/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092643

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212625
Sample ID: lcs100213	Laboratory Control Sample				Run: 5971A.I_131002A				10/02/13 09:57
Benzene	4.96	ug/L	1.0	99	71	133			
Ethylbenzene	5.52	ug/L	1.0	110	78	131			
Toluene	5.68	ug/L	1.0	114	78	134			
m+p-Xylenes	11.6	ug/L	1.0	116	78	133			
o-Xylene	5.72	ug/L	1.0	114	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	78	70	130			
Surr: Dibromofluoromethane			1.0	94	77	126			
Surr: p-Bromofluorobenzene			1.0	101	76	127			
Surr: Toluene-d8			1.0	104	79	122			
Sample ID: blk100213	Method Blank				Run: 5971A.I_131002A				10/02/13 10:26
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	78	70	130			
Surr: Dibromofluoromethane			1.0	91	77	126			
Surr: p-Bromofluorobenzene			1.0	102	76	127			
Surr: Toluene-d8			1.0	103	79	122			
Sample ID: b13092553-002ams	Sample Matrix Spike				Run: 5971A.I_131002A				10/02/13 20:22
Benzene	154	ug/L	10	96	71	133			
Ethylbenzene	114	ug/L	10	109	78	131			
Toluene	114	ug/L	10	114	78	134			
m+p-Xylenes	223	ug/L	10	112	78	133			
o-Xylene	114	ug/L	10	114	79	136			
Surr: 1,2-Dichloroethane-d4			20	81	70	130			
Surr: Dibromofluoromethane			20	96	77	126			
Surr: p-Bromofluorobenzene			20	104	76	127			
Surr: Toluene-d8			20	108	79	122			
Sample ID: b13092553-002amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_131002A				10/02/13 20:50
Benzene	151	ug/L	10	93	71	133	2.1	20	
Ethylbenzene	108	ug/L	10	103	78	131	5.8	20	
Toluene	105	ug/L	10	105	78	134	8.8	20	
m+p-Xylenes	210	ug/L	10	105	78	133	6.3	20	
o-Xylene	106	ug/L	10	106	79	136	8.0	20	
Surr: 1,2-Dichloroethane-d4			20	78	70	130			
Surr: Dibromofluoromethane			20	94	77	126			
Surr: p-Bromofluorobenzene			20	103	76	127			
Surr: Toluene-d8			20	107	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/14/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092643

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212626
Sample ID: lcs100213	Laboratory Control Sample				Run: CS5972A.I_131002A				10/02/13 10:08
Benzene	5.48	ug/L	1.0	110	71	133			
Ethylbenzene	6.08	ug/L	1.0	122	78	131			
Toluene	6.16	ug/L	1.0	123	78	134			
m+p-Xylenes	12.1	ug/L	1.0	121	78	133			
o-Xylene	5.72	ug/L	1.0	114	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	86	70	130			
Surr: Dibromofluoromethane			1.0	96	77	126			
Surr: p-Bromofluorobenzene			1.0	107	76	127			
Surr: Toluene-d8			1.0	112	79	122			
Sample ID: blk100213	Method Blank				Run: CS5972A.I_131002A				10/02/13 11:01
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	88	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	114	76	127			
Surr: Toluene-d8			1.0	109	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Geosyntec Consultants **Report Date:** 10/14/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092643

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R212717
Sample ID: lcs100313	Laboratory Control Sample				Run: CS5972A.I_131003A				10/03/13 10:41
Benzene	5.40	ug/L	1.0	108	71	133			
Ethylbenzene	5.80	ug/L	1.0	116	78	131			
Toluene	6.00	ug/L	1.0	120	78	134			
m+p-Xylenes	11.6	ug/L	1.0	116	78	133			
o-Xylene	5.52	ug/L	1.0	110	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	88	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	104	76	127			
Surr: Toluene-d8			1.0	111	79	122			
Sample ID: blk100313	Method Blank				Run: CS5972A.I_131003A				10/03/13 11:34
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	89	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	107	76	127			
Surr: Toluene-d8			1.0	108	79	122			
Sample ID: b13092643-019cms	Sample Matrix Spike				Run: CS5972A.I_131003A				10/03/13 16:55
Benzene	270	ug/L	25	104	71	133			
Ethylbenzene	392	ug/L	25	112	78	131			
Toluene	290	ug/L	25	113	78	134			
m+p-Xylenes	812	ug/L	25	113	78	133			
o-Xylene	334	ug/L	25	106	79	136			
Surr: 1,2-Dichloroethane-d4			50	88	70	130			
Surr: Dibromofluoromethane			50	99	77	126			
Surr: p-Bromofluorobenzene			50	107	76	127			
Surr: Toluene-d8			50	110	79	122			
Sample ID: b13092643-019cmsd	Sample Matrix Spike Duplicate				Run: CS5972A.I_131003A				10/03/13 17:22
Benzene	258	ug/L	25	100	71	133	4.5	20	
Ethylbenzene	376	ug/L	25	106	78	131	4.2	20	
Toluene	268	ug/L	25	104	78	134	7.9	20	
m+p-Xylenes	774	ug/L	25	105	78	133	4.8	20	
o-Xylene	322	ug/L	25	102	79	136	3.7	20	
Surr: 1,2-Dichloroethane-d4			50	88	70	130			
Surr: Dibromofluoromethane			50	98	77	126			
Surr: p-Bromofluorobenzene			50	107	76	127			
Surr: Toluene-d8			50	105	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Gillette, WY Branch

Client: Geosyntec Consultants **Report Date:** 10/14/13

Project: Mesa-Biere 1-22 Well Site **Work Order:** B13092643

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: 131010A
Sample ID: MBLK1310100000	Method Blank				Run: BAL-ACCU-124_131010A				10/10/13 14:05
Total Petroleum Hydrocarbons	ND	mg/L	0.7						
Sample ID: LCS1310100000	Laboratory Control Sample				Run: BAL-ACCU-124_131010A				10/10/13 14:06
Total Petroleum Hydrocarbons	15	mg/L	5.0	74	64	132			
Sample ID: LCSD1310100000	Laboratory Control Sample Duplicate				Run: BAL-ACCU-124_131010A				10/10/13 14:07
Total Petroleum Hydrocarbons	16	mg/L	5.0	78	64	132	5.9	34	
Sample ID: B13092643-002BMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010A				10/10/13 14:14
Total Petroleum Hydrocarbons	5.3	mg/L	5.0	27	64	132			S
Sample ID: B13092643-018BMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010A				10/10/13 14:20
Total Petroleum Hydrocarbons	18	mg/L	5.0	90	64	132			
Sample ID: B13092643-021BMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010A				10/10/13 14:22
Total Petroleum Hydrocarbons	17	mg/L	5.0	86	64	132			
Method: E1664A									Batch: 131010C
Sample ID: MBLK_901310100000	Method Blank				Run: BAL-ACCU-124_131010C				10/10/13 13:47
Total Petroleum Hydrocarbons	ND	mg/L	0.7						
Sample ID: LCS_901310100000	Laboratory Control Sample				Run: BAL-ACCU-124_131010C				10/10/13 13:49
Total Petroleum Hydrocarbons	14	mg/L	5.0	72	64	132			
Sample ID: LCSD_901310100000	Laboratory Control Sample Duplicate				Run: BAL-ACCU-124_131010C				10/10/13 13:50
Total Petroleum Hydrocarbons	15	mg/L	5.0	74	64	132	3.4	34	
Sample ID: G13100045-001EMS	Sample Matrix Spike				Run: BAL-ACCU-124_131010C				10/10/13 14:24
Total Petroleum Hydrocarbons	19	mg/L	5.0	90	64	132			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Workorder Receipt Checklist

Geosyntec Consultants

B13092643

Login completed by: Gina McCartney

Date Received: 9/30/2013

Reviewed by: BL2000\jklier

Received by: jrz

Reviewed Date: 10/1/2013

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Temp Blank temperature for Cooler 1 was 1.2°C, Cooler 2 was 0.5°C , Cooler 3 was 1.2°C , Cooler 4 was 0.6°C , Cooler 5 was 0.8°C and Cooler 6 was 0.4°C.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: GEOSYNTEC

Report Mail Address (Required): 1201 THIRD AVE, STE 330 SEATTLE, WA 98101

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Invoice Address (Required): 1201 THIRD AVE, STE 330 SEATTLE, WA 98101

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Project Name, PWS, Permit, Etc.: MESA-BIERE 1-22 WELL SITE

Contact Name: CHRISTA TYRRELL Phone/Fax: 406.209.1905

Cell:

Invoice Contact & Phone: CHRISTA TYRRELL 406.209.1905

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Sampler: (Please Print) CT, SW, CL, MJ, CM, MY

Purchase Order:

Quote/Bottle Order: 72929

Special Report/Formats:
- ☐ DW
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☒ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	CL, TDS	BTEX, TPH	SEE ATTACHED	Standard Turnaround (TAT)	RUSH	LABORATORY USE ONLY
6	1 PNR-RW-05	09/27/13	10:17	GW	✓	✓				B1309264-001
6	2 PNR-RW-03	09/27/13	10:52	GW	✓	✓				-002
5	3 M-27	09/27/13	09:20	1W	✓					-003
5	4 PNR-10DUP	09/27/13	12:16	1W	✓					-004
5	5 PNR-10	09/27/13	12:16	1W	✓					-005
5	6 PNR-38-08	09/27/13	14:41	1W	✓					-006
5	7 PNR-22	09/27/13	10:43	1W	✓					-007
5	8 MOC-4	09/27/13	16:50	1W	✓					-008
5	9 PNR-13	09/26/13	09:31	1W	✓					-009
5	10 PNR-40-12	09/26/13	16:41	1W	✓					-010

➡ Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: COOLER 1 — 1.2, 2 — 0.5, 3 — 1.2, 4 — 0.6, 5 — 0.8, 6 — 0.4

Shipped by: HAND

Cooler ID(s): TB

Receipt Temp: SEE COMMENTS °C

On Ice: (Y) N

Custody Seal: On Bottle Y (N); On Cooler Y (N)

Intact: Y N

Signature Match: Y N

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Matt Usuriello	9/30/13 1125	Matt Usuriello			

Received by Laboratory: [illegible] 9/30/13 1125

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

PLEASE PRINT (Provide as much information as possible.)

Company Name: GEOSYNTEC	Project Name, PWS, Permit, Etc.: MESA-BIERE 1-22 WELL SITE	Sample Origin State: MT	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address (Required): 1201 THIRD AVE, STE 330 SEATTLE, WA 98101	Contact Name: CHRISTA TYRRELL Phone/Fax: 406.209.1905	Cell:	Sampler: (Please Print) CT, SW, CL, MJ, CM, MU
☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM	Invoice Contact & Phone: CHRISTA TYRRELL 406.209.1905	Purchase Order:	Quote/Bottle Order: 72929
Invoice Address (Required): SAME ☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM			

Special Report/Formats:
☐ DW ☐ POTW/WWTP ☐ State: ____ ☐ Other: ____
☒ EDD/EDT (Electronic Data) Format: ____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	TDS, CL	BTEX, TPH								SEE ATTACHED	Standard Turnaround (TAT)	RUSH	Comments	LABORATORY USE ONLY
2	1 PNR-RW-04	09/27/13	10:36	6W	✓	✓									✓			1309264301
2	2 ~~PNR~~ MW-31-13	09/26/13	16:12	6W	✓	✓									✓			-012
2	3 PNR-RW-06	09/27/13	09:12	1W	✓													-013
2	4 PNR-RW-08	09/27/13	09:32	1W	✓													-014
2	5 PNR-RW-09	09/27/13	09:44	1W	✓													-015
2	6 PNR-RW-12	09/27/13	10:01	1W	✓													-016
3	7 PNR-RW-11	09/27/13	11:52	6W	✓	✓												-017
3	8 PNR-RW-01	09/27/13	12:10	6W	✓	✓												-018
3	9 PNR-RW-10	09/27/13	12:23	6W	✓	✓												-019
6	10 PNR-RW-02	09/27/13	11:11	6W	✓	✓												-020

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: COOLER 1 – 1.2, 2 – 0.5, 3 – 1.2, 4 – 0.6, 5 – 0.8, 6 – 0.4

Shipped by: HAND
Cooler ID(s): TB
Receipt Temp: SEE COMMENTS °C
On Ice: (Y) N
Custody Seal: On Bottle Y (N); On Cooler Y (N)
Intact: Y N
Signature Match: Y N

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Matt Usuriello	9/30/13 1125	Matt Usuriello			

Received by Laboratory: J. ZOMMER 9/30/13 1125

Sample Disposal: Return to Client: ____ Lab Disposal: ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: GEOSYNTEC

Project Name, PWS, Permit, Etc.: MESA-PIERE 1-22 WELL SITE

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Report Mail Address (Required): 1201 THIRD AVE, STE 330, SEATTLE, WA 98101

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Contact Name: CHRISTA TYRRELL Phone/Fax: 406.209.1905 Cell:

Sampler: (Please Print) CT, SW, CL, MJ, CM, MH

Invoice Contact & Phone: CHRISTA TYRRELL 406.209.1905

Purchase Order:

Quote/Bottle Order: 72929

Invoice Address (Required): SAME

☒ No Hard Copy Email: CTYRRELL@GEOSYNTEC.COM

Special Report/Formats:
☐ DW
☐ POTW/WWTP
☐ State: _____
☐ Other: _____
☒ EDD/EDT (Electronic Data) Format: _____
☐ LEVEL IV
☐ NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

ANALYSIS REQUESTED

Standard Turnaround (TAT) — RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: COOLER 1 – 1.2, 2 – 0.5, 3 – 1.2, 4 – 0.6, 5 – 0.8, 6 – 0.4

Shipped by: HAND

Cooler ID(s):

Receipt Temp: SEE COMMENTS C

On Ice: (Y) N

Custody Seal: On Bottle Y (N); On Cooler Y (N)

Intact: Y N

Signature Match: Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	CL, TDS	BTEX	TPH							SEE ATTACHED				LABORATORY USE ONLY
1	PNR-RW-13	09/28/13	08:05	6W	✓	✓	✓											B1309264 3-021
2	PNR-RW-13DUP	09/28/13	08:05	6W	✓	✓	✓											-022
3	PNR-8	09/29/13	10:15	1W	✓													-023
4	PNR-8DUP	09/29/13	10:15	1W	✓													-024
5	PNR-100	09/29/13	10:28	1W	✓													-025
6	PNR-100	09/28/13	13:45	3W		✓												-026
7	PNR-39-08	09/28/13	14:48	1W	✓													-027
8	PNR-28	09/28/13	11:34	1W	✓													-028
9	PNR-19	09/28/13	12:46	6W	✓	✓	✓											-029
10																		-030

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Matt Usurillo	9/30/13 1125	Matt Usurillo			

Received by Laboratory: DRZORNEIR 9/30/13 1125 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Page _____ of _____

Company Name: Geosyntec

Report Mail Address (Required):

☐ No Hard Copy Email:

Invoice Address (Required):

☐ No Hard Copy Email:

Special Report/Formats:
☐ DW ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format:
☐ State: ☐ LEVEL IV
☐ Other: ☐ NELAC

Project Name, PWS, Permit, Etc.

Sample Origin State:

EPA/State Compliance: Yes ☐ No ☐

Contact Name: Phone/Fax: Cell:

Sampler: (Please Print)

Invoice Contact & Phone:

Purchase Order:

Quote/Bottle Order:

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

SEE ATTACHED

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:
COOLER 1 - 1.2
2 - 0.5
3 - 1.2
4 - 0.6
5 - 0.8
6 - 0.4

Shipped by: Hand
Cooler ID(s):
Receipt Temp 1B °C
On Ice: Y N
Custody Seal On Bottle Y N
On Cooler Y N
Intact Y N
Signature Match Y N

LABORATORY USE ONLY
B309263-030
-031
-032
-033
-034
-035

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX
1	1 TB091013-BTSSHP02 62			
2	2 TB091013-BTSSHP02 62			
3A	3 TB091013-BTSSHP02 62			
3B	4 TB091013-BTSSHP02 62			
4	5 TB091013-BTSSHP02 62			
6	6 TB091013-BTSSHP02 62			
	7			
	8			
	9			
	10			

Custody Record MUST be Signed

Relinquished by (print): Date/Time: Signature:
Relinquished by (print): Date/Time: Signature:
Received by (print): Date/Time: Signature:
Received by (print): Date/Time: Signature:
Received by Laboratory: JEZBORMEIR Date/Time: 9-30-13 11:25 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.