AP-56

Chevron
AGWMR

2013

Kegan W. Boyer, P.G.
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February 17, 2015

Mr. Jim Griswold
Environmental Bureau
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Re: Mark Owen #9 Reserve Pit (~~AP #57~~) AP-56 TJO
2013 Annual Groundwater Monitoring and Site Assessment Report

Dear Mr. Griswold,

On behalf of Chevron Environmental Management Company (CEMC), Conestoga-Rovers &Associates (CRA) has prepared the enclosed report *2013 Annual Groundwater Monitoring and Site Assessment Report* for the Mark Owen #9 Reserve Pit (AP #57) project. The enclosed document provides information regarding the results of assessment and monitoring activities completed at the site during calender year 2013. A comprehensive report detailing the results of groundwater monitoring and assessment activites completed in calendar year 2014 will be forthcoming soon.

CEMC appreciates your continued support of our efforts at the Mark Owen #9 site. Should you have any questions, please do not hesitate to contact me by phone at 713-372-7705 or via e-mail at kegan.boyer@chevron.com.

Sincerely,

Kegan W. Boyer, P.G.
Environmental Project Manager

cc: Bernie Bockish, CRA

CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

2013 Annual Groundwater Monitoring and Site Assessment Report

Mark Owen No. 9
NMOCD AP No. 57

Prepared for: Chevron Environmental Management Company

Conestoga-Rovers & Associates
6121 Indian School Road, NE Suite 200
Albuquerque, New Mexico 87110

January 2015 • 046121 • Report No. 10

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Section 1.0 Project Information and Release Background

This Annual Groundwater Monitoring Report presents groundwater data collected during the 2013 reporting period at Mark Owen #9 Reserve Pit (Site). On March 19, June 6, September 12, and November 19, 2013, Conestoga-Rovers & Associates (CRA) conducted the quarterly groundwater monitoring events on behalf of Chevron Environmental Management Company (CEMC).

The legal description of the Site is the NW/4 of the SE/4 of Section 34, Township 21 South, Range 37 East, Lea County, New Mexico (**Figure 1**). The Site is situated immediately southeast of the town of Eunice, New Mexico and is associated with a release of fluids from the reserve pit used for the drilling of the Mark Owen #9 oil well by Chevron in 2006. Global Positioning System (GPS) coordinates for the site are latitude 32° 25' 56.49" north and longitude 103° 08' 46.27" west. The O-GRID number assigned to the Site is reported as #4323. The Mark Owen #9 well site is currently operated by Chevron USA. A Site details map is provided as **Figure 2**.

A Revised Stage 1 Abatement Plan (AP) for the Mark Owen #9 Reserve Pit was submitted on behalf of CEMC by CRA to the New Mexico Oil Conservation Division (NMOCD) in a correspondence dated March 13, 2007. The NMOCD assigned AP #57 to this Abatement Plan, however, the agency did not approve the March 2007 submittal. Consequently, CEMC performed additional investigation work in October 2007 in order to collect additional soil and groundwater data. An Interim Investigation Report was submitted to the agency in March 2008 summarizing the results of the October 2007 investigation. Reports for 2008, 2009, and 2010 were submitted by CRA to CEMC who in turn submitted the reports to the NMOCD in Santa Fe, New Mexico. Currently the Site is monitored quarterly. A revised AP has been submitted to the NMOCD. The scope of this AP has been verbally agreed to by the NMOCD and CEMC. Currently, public notifications have been completed and CEMC is waiting on final approval of the AP by the NMOCD.

Section 2.0 Regulatory Framework

The NMOCD guidelines require groundwater to be analyzed for constituents of concern (COC) as defined by the New Mexico Water Quality Control Commission (NMWQCC) regulations. The NMWQCC regulations provide Human Health Standards for Groundwater. The COC in affected groundwater at the Site is chloride. In this report, groundwater analytical results for chloride, TDS, BTEX, sulfates and total alkalinity are compared to the NMWQCC standards shown in the following table:

Analyte	NMWQCC Standard for Groundwater (mg/L)
Chloride[2]	250
Fluoride[1]	1.6
Nitrate (NO_3 as N)[1]	10
Sulfate (SO_4)[2]	600
Total Dissolved Solids (TDS)[2]	1,000
Benzene[1]	0.01
Toluene[1]	0.75
Ethylbenzene[1]	0.75
Total Xylenes[1]	0.62

Notes:
1) [1]NMWQCC Human Health Standards per NMAC 20.6.2.310B
2) [2]NMWQCC Other Standards for Domestic Water Supply per NMAC20.6.2.3103B

Section 3.0 Soil Boring and Monitor Well Plugging and Abandonment Activities

Prior to the initiation of soil boring or well plugging and abandonment activities on Site, work was performed to allow safe access to the former reserve pit. On October 23, 2013, RWI, under the supervision of CRA and Chevron, leveled the pit bottom and smoothed and sloped the pit side walls to a 1:1 slope. The work was completed under a Chevron approved Dig Plan and Excavation Permit.

Additional subsurface investigation work was performed at the Site during 2013. White Drilling of Clyde, Texas advanced three soil borings at the Site. Borings B-1, B-2, and B-3 were advanced at the site between November 19 and 20, 2013. Prior to mobilizing drilling equipment to the Site, the boring locations were marked and a New Mexico One Call utility locate ticket was completed at least 48-hours prior to mobilization. A Chevron Dig Plan and Excavation Permit were completed and approved by the Chevron, Eunice Field Management Team following the utility locate. Each boring location was pre-cleared by air knife prior to drilling. Borings were located within the Site's former reserve pit. The bottom of the former reserve pit is estimated at a depth of approximately 8 feet below ground surface (bgs). Soil boring B-1 was located in the northeast corner of the reserve pit, B-2 was located in the center of the reserve pit, and B-3 was located in the northwest corner of the reserve pit (**Figure 2**).

Borings were drilled using an air rotary drill rig. Sampling was performed using a 24-inch long, 2 inch diameter split spoon. Soil samples were collected in five foot intervals beginning at a depth of five feet below the pit bottom. Soil samples were collected for laboratory analysis.

Soil samples and drill cuttings were used for logging the soil type. Soil borings B-1, B-2, and B-3 were each advanced to a total depth of 21.5 feet below the pit floor. Groundwater was not encountered in any of the three borings and all borings were plugged using hydrated bentonite chips. Boring logs for B-1, B-2 and B-3 are included in **Appendix A**.

Also located within the former reserve pit at the Site was Temporary Monitor Well, TMW-3 (**Figure 2**). The temporary well was properly plugged and abandoned on November 19th, 2013 in accordance with the New Mexico Office of the State Engineer approved Plugging Plan of Action (**Appendix B**). The PVC well casing was cut off below grade and approximately six gallons of 95% Type I/II Portland cement and 5% bentonite was pumped from the bottom of well casing to ground surface.

3.1 Soil Analytical Results

Four soil samples were collected from each of the three soil borings (total of 12 samples) for laboratory analysis. Soil samples were collected in laboratory prepared containers, packed on ice, and sent under chain of custody documentation to Xenco Laboratories of Odessa, Texas. Soil samples were analyzed for chloride by Environmental Protection Agency (EPA) Method 300.0. A summary of soil analytical data has been included as **Table 1**.

Soil samples collected from B-1 indicated concentrations of chloride above the site specific NMOCD Recommended Remediation Action Level (RRAL) of 250mg/kg. Soil samples collected from soil borings B-2 and B-3 indicated chloride concentrations in soil below the 250 mg/kg RRAL. The corresponding laboratory analytical report has been included in **Appendix C**.

Section 4.0 Geophysical Surveys of Subsurface Soil

CRA completed a geophysical investigation at the Site located in Lea County, New Mexico, for CEMC between December 16 and 20, 2013. The purpose of the investigation was to assess the extent of suspected chloride-impacted areas in the subsurface. The geophysical investigation consisted of an electromagnetic (EM) survey and an electrical resistivity (ER) survey. An EM31 terrain conductivity meter (EM31) was used for the collection of conductivity measurements within the shallow subsurface, to an approximate depth of 17 feet below ground surface (bgs). Apparent resistivity measurements were collected along three ER survey lines to an approximate depth of 50 feet bgs, and these data were utilized to produce a 2-dimensional image of resistivity response in the subsurface beneath the Site.

4.1 Geophysical Survey Coverage

The geophysical survey coverage for both surveys is presented on **Figure 3**. The EM31 conductivity survey was completed over areas surrounding the former pit (where accessible), on survey lines spaced approximately 30 feet apart. The EM31 survey lines were oriented slightly east of a south to north trend. Topographic features such as access roads, perimeter and floor of the former reserve pit, pump jack compound and well pad were also surveyed for position control. The ER survey lines were completed to the west, east, and north of the former pit at line orientations as indicated on **Figure 3**.

4.2 Geophysical Survey Methods

The geophysical methods used for the investigation can be briefly described as follows. The EM31 consists of transmitter and receiver coils located at opposite ends of a 14-foot long boom. In vertical dipole mode (with the instrument held at hip level), this coil configuration yields an approximate depth of investigation of 17 feet bgs. The survey was conducted in metal detection mode, by logging the quadrature (Q) component of the induced secondary field. The secondary field Q component measures the conductivity of the shallow subsurface, and yields results in milliSiemens per meter (mS/m). The EM31 was used to determine the horizontal or lateral extent of suspected shallow chloride impacts, by delineating areas of elevated conductivity response. During the course of the survey, data were automatically stored in a Juniper Pro4000 data logger connected to a Leica GS-20 differential global positioning system (DGPS) receiver for position control. Both the EM31 survey data and DGPS points were collected at 1 second intervals. The DGPS locations are reported as New Mexico State Plane coordinates, North American Datum of 1983 (NAD83) Geodetic System.

The ER survey was completed using a Syscal R1 Plus receiver manufactured by Iris instruments, and a 72-electrode spread. The Syscal R1 Plus is a multi-electrode resistivity imaging system, with an internal switching board and a 200 Watt power source. The output current is automatically adjusted to optimize the input voltage values and ensure the best measurement quality. This system is designed to automatically survey pre-defined sets of resistivity measurements with roll-along capability.

Electrical resistivity profiles were completed along three sides of the former pit. Each survey setup utilized a 72-electrode spread configuration with 5-foot electrode spacings. A Wenner array was employed, whereby the two voltage electrodes were at the center of the profile and bound by the two current electrodes for each measurement. This array yielded a depth of investigation of approximately 50 feet bgs, along survey lines approximately 360 feet long.

Upon return from the Site, the ER survey and EM31 data were downloaded to a computer and compiled for data processing and plotting. The apparent resistivity data were imported into an inversion software program (RES2DINV), and processed to yield a modeled profile section of resistivity.

4.3 EM31 Conductivity Results

The EM31 data were processed as a colored contour plot, and superimposed over an aerial photograph outlining the surveyed area as presented on **Figure 4**. The highest intensity conductivity responses are colored red to purple, while areas of low response are colored blue. All remaining intermediate responses correspond to the color scale presented on the figure.

Review of the EM31 results reveals that the conductivity generally ranged from 5 to 50 mS/m, with the exception of the following. Several negative responses (contoured dark blue) were also observed, typically along linear trends in the southwest corner and along the northern boundary of the survey grid. These responses corresponded to locations where the EM31 survey crossed over metal pipes found on the ground surface. In locations where the survey was completed along the axis of a metal pipe the EM31 response was elevated, with peak values of approximately 70 mS/m. This result was observed in the northeast quadrant of the survey coverage, and is attributed to the pipe acting as an infinitely long conductor when the EM31 meter was oriented parallel to it.

Results from non-impacted areas including the survey coverage west of the former reserve pit indicate that the background conductivity responses typically ranged from 5 to 10 mS/m. Slightly anomalous responses were observed around the perimeter and within the floor of the former reserve pit. Peak responses up to 50 mS/m were observed at the top of slope in the north east corner of the former reserve pit. However, the elongated shape of this response suggests that this result is likely due to the presence of a buried metal object, such as a piece of metal pipe.

The slightly anomalous responses emanating from the former reserve pit appear to extend to the south and south east, beneath the pump jack compound and crushed aggregate pad to areas beyond the survey coverage. The direction of suspected chloride plume migration in the shallow subsurface is consistent with the flow of shallow groundwater beneath the Site. It must be noted that no anomalous responses in the shallow subsurface were observed immediately west and north of the reserve pit and that to the east, only slightly anomalous responses were observed.

Thus, the responses of suspected chloride-impacted areas associated with the former pit were only slightly anomalous and generally measured 3 to 5 times higher than background values. This is in comparison to CRA's experience with other former reserve pit investigations, where anomalous responses ten to twenty times higher than background are commonly measured.

4.4 Electrical Resistivity Survey Results

The locations of the electrical resistivity survey lines can be found on **Figure 3**. The modeled resistivity results are presented on **Figures 5** to **7**. As previously mentioned, these profiles were generated by processing the measured apparent resistivity data with the inversion program RES2DINV, to yield a modeled resistivity section for each line of the survey. The modeled sections represent the resistance of soils in the shallow subsurface, and thus provide an interpretation of the overburden sequences and areas of suspected chloride impacts along the lines of survey. Stratigraphic logs of nearby monitor wells have also been provided on the sections, to allow comparison between resistivity response and the various soil types encountered in the shallow subsurface.

The highest resistivity values on the modeled sections are colored dark blue, while areas of low resistivity (or conversely, high conductivity) are colored red to purple. All remaining intermediate responses correspond to the color scale presented at the bottom of the sections. Review of the colored plots reveals that contour intervals ranging from 17.5 to 1500 Ohm-m were applied. The plots also indicate that suspected chloride-impacted soils can be characterized by a measured resistivity response of approximately 17.5 to 40 Ohm-m.

The modeled resistivity sections indicate that the vertical distribution of suspected chloride impacts is variable for the three lines of survey. The results for each of the ER survey lines can be further described as follows.

Line 1 was located along the western boundary of the reserve pit and crushed aggregate service pad. This area is upgradient of the direction of shallow groundwater flow, and thus was expected to characterize background conditions and corresponding resistivity responses. Review of the modeled resistivity results presented on **Figure 5** indicates that the response from ground surface to approximately 15 feet bgs was dominated by elevated resistivity values in excess of 750 Ohm.m. This response was attributed to silty sands and caliche observed in the field, and confirmed by the stratigraphic log for well MW-3. Between 15 and 35 feet bgs, the resistivity response generally ranged from 250 to 750 Ohm.m, and reflected the presence of interbedded sand and sandstone. Beneath this depth interval, low resistivities of 40 to 150 Ohm.m indicated the presence of a clay sequence.

However, lower resistivity values of 17.5 to 40 Ohm.m were measured at depth at the north end of the survey line, adjacent to the former pit. These results suggest that chloride has likely impacted the sand layer overlying a clay sequence in this area.

Line 2 transected the crushed aggregate pad and continued along the eastern boundary of the former reserve pit. The modeled resistivity results for Line 2 presented on **Figure 6** indicate that suspected chloride impacts appear to extend from the shallow subsurface south of the pit to the deeper subsurface adjacent to the pit. Low resistivity values ranging from 17.5 to 40 Ohm.m were observed on surface east of the oil wellhead, and also across the deeper saturated zone at depths of 40 to 50 feet bgs. Based on the stratigraphic log for well MW-1, the chloride has impacted a sand sequence overlying a clay confining layer. Resistivity responses of 55 to 175 Ohm.m indicate that the upper saturated zone (20 to 40 feet bgs) has also been impacted by chloride. At the north end of the survey coverage, resistivity responses of 750 to 2000 Ohm.m reveal that no chloride impacts have occurred in the shallow subsurface.

The modeled resistivity results for Line 3 presented on **Figure 7** reveal that the shallow overburden between 15 to 20 feet bgs yielded resistivity values ranging from 750 to 3000 Ohm.m. These results indicate that the interbedded sand and caliche at these depths have not been impacted by chloride. However, the underlying saturated zone was characterized by responses of 17.5 to 100 Ohm.m, with the more conductive responses located at the base of the section where clay was encountered. The resistivity response between 20 to 50 feet bgs indicates that soils at this depth have been impacted by chloride which emanated from the former pit. Similar to the results observed for the other survey lines, the chloride impacts appear to occur in sandy sequences located above a clay confining layer.

4.5 Geophysical Survey Conclusions

Based on the results of the geophysical investigation presented herein, the following conclusions are presented:

- The EM31 conductivity results indicated areas of background response and the approximate limits of suspected chloride impacts, to a depth of approximately 17 feet bgs.
- The EM31 survey indicated that the conductivity responses beneath the former pit and downgradient area to the southeast was only slightly elevated, and generally measured 3 to 5 times higher than background values.
- With the exception of low resistivity values suggesting chloride impacts at depth adjacent to the former pit, the ER survey characterized background responses along Line 1 located to the west of the pit.

- The ER survey delineated the vertical extent of the suspected chloride impacts along Line 2 located adjacent to the oil wellhead and at depth along the eastern boundary of the former pit, where low resistivity responses indicative of chloride impacts were observed above a confining clay layer.
- To the north of the pit on survey Line 3, the ER survey confirmed the presence of un-impacted sand and caliche in the shallow subsurface and above the water table, and delineated chloride impacts in the saturated zone overlying the clay confining layer.

Section 5.0 Groundwater Monitoring Activities

The Site is monitored quarterly with a network of four monitor wells (MW-1, MW-2, MW-3, and MW-4) installed in October 2007, three wells (MW-5, MW-6, and MW-7) installed in September 2010 and three wells (MW-8, MW-9 and RW-1) installed in September 2011. Two monitor wells (MW-10 and MW-11) were installed in December 2012 and subsequently added to the quarterly schedule. Each well has an above-ground surface completion.

Monitor wells were sampled using disposable Hydrasleveeves™, a no purge, passive sampling method accepted by the EPA. Prior to sampling the monitor wells, a measurement of the static water level and a vertical conductivity profile were completed for each well using a Solinst® Temperature, Water Level, and Conductivity (TLC) meter. The static water level of each well was measured to the nearest hundredth of a foot. Conductivity profiles were completed by taking readings at approximately one foot intervals within the water column present in each well. Once water level and conductivity profile information was recorded, a Hydrasleeve™ was placed in the well and left undisturbed over night to allow the well to equilibrate prior to sampling. Within the 24 hours following placement of the Hydrasleeves™, samples were collected by removing the self-filling samplers from each well. Laboratory-supplied sample containers were filled directly from the Hydrasleeves™ and water quality parameters, including pH, temperature and conductivity, were recorded.

The groundwater samples were placed on ice in insulated coolers and chilled to a temperature of approximately 4 $^{\circ}$C (40 $^{\circ}$F). Samples were delivered to Xenco Laboratories of Odessa, Texas using EPA-approved chain-of-custody procedures. Water samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8260B, total alkalinity (as $CaCO_3$) by SM2320B, chloride and sulfate by EPA Method 300/300.1, and total dissolved solids (TDS) by SM2540C.

Groundwater sampling activities did not generate purge water and disposal was not required.

5.1 Potentiometric Surface and Gradient

Groundwater elevation data are presented in **Table 2** and are consistent with elevations from the 2013 data. Groundwater gradient maps for March, June, September and November 2013 are presented as **Figures 8, 9, 10** and **11**, respectively. Groundwater elevations ranged from 3367.95 feet above mean sea level (amsl) to 3371.93 feet amsl on March 18, 2013, from 3367.73 feet to 3371.77 feet amsl on June 6, 2013, from 3367.50 feet to 3371.87 feet amsl on September 11, 2013, and from 3367.86 feet to 3371.87 feet amsl on November 19, 2013. Groundwater flow at the Site is to the southeast at a gradient of 0.0056-foot/foot. Potentiometric surface maps for each quarter of groundwater sampling in 2013 are included as **Figure 8** through **Figure 11**.

5.2 Analytical Results

The 2013 analytical results are summarized in **Table 3** and **Table 4**. Eleven monitor wells and one recovery well (MW-1 thru MW-11 and RW-1) were sampled during each quarterly event. Site monitor wells exceeded chloride and TDS NMWQCC standards during the quarterly monitoring events except for MW-2 in March and September 2013, and MW-3 and MW-4 during the four 2013 quarterly events. Monitor Well MW-8 was the only well to exceed the sulfate NMWQCC standard. Although concentrations of sulfate in samples collected from MW-8 exceed the NMWQCC standard, it is unlikely that this is a result of the reserve pit release since monitor wells upgradient of MW-8 with higher concentrations of chlorides and TDS have lower concentrations of sulfate. The elevated level of sulfate in MW-8 might reflect naturally occurring conditions or could have the potential to be associated with off-Site operations. Constituents of BTEX were below NMWQCC standards in all groundwater samples collected in 2013. Isopleth maps approximating chloride and TDS concentration contours for the March, June, September and November 2013 events are shown on **Figures 12** through **19**.

Groundwater COCs detected above the NMWQCC "Other Standards for Domestic Water Supply" are shaded in **Table 4**.

A duplicate sample was collected from MW-9 during the March 2013 monitoring event, from RW-1 in June 2013, from MW-7 in September 2013, and from MW-5 in November 2013. Duplicate constituents were detected without any significant deviations during the March, June, and September monitoring events. Constituents detected in the duplicate collected from MW-5 during the November 2013 event deviated significantly for sulfate, chloride and TDS. Copies of the certified analytical reports and chain-of-custody documentation are attached in **Appendix D**.

Section 6.0 Summary of Findings

Based on groundwater assessment activities performed by CRA at the Site in March, June, September and November, 2013, the summaries of findings include the following:

- Groundwater elevations ranged from 3367.95-feet to 3371.93-feet on March 18, 2013, from 3367.73-feet to 3371.77-feet on June 6, 2013, from 3367.50-feet to 3371.87-feet on September 11, 2013, and from 3367.86-feet to 3371.87-feet above mean sea level on November 19, 2013. Groundwater flow at the Site is to the southeast at a gradient of 0.0056-ft/ft.
- Site monitor wells exceeded chloride and TDS NMWQCC standards during the quarterly monitoring events except for MW-2 in March and September 2013, and MW-3 and MW-4 during all four 2013 quarterly events.
- Sulfate was detected at concentrations above the NMWQCC standard in MW-8 during all four quarterly monitoring events in 2013;
- The chloride plume is not delineated to the south or east of current site monitor wells.

Section 7.0 Recommendations

Based upon the summary of findings presented in this report, the following is recommended:

- Delineate groundwater impacts to the east and south of the reserve pit;
- Subsequent to the delineation of the plume, CRA will evaluate remedial alternatives to address the chloride impacted groundwater.
- Continue quarterly groundwater monitoring in 2014 to monitor the chloride, TDS, and sulfate levels in site monitor wells.

Respectfully Submitted,

CONESTOGA ROVERS & ASSOCIATES

Christine Mathews
Project Scientist

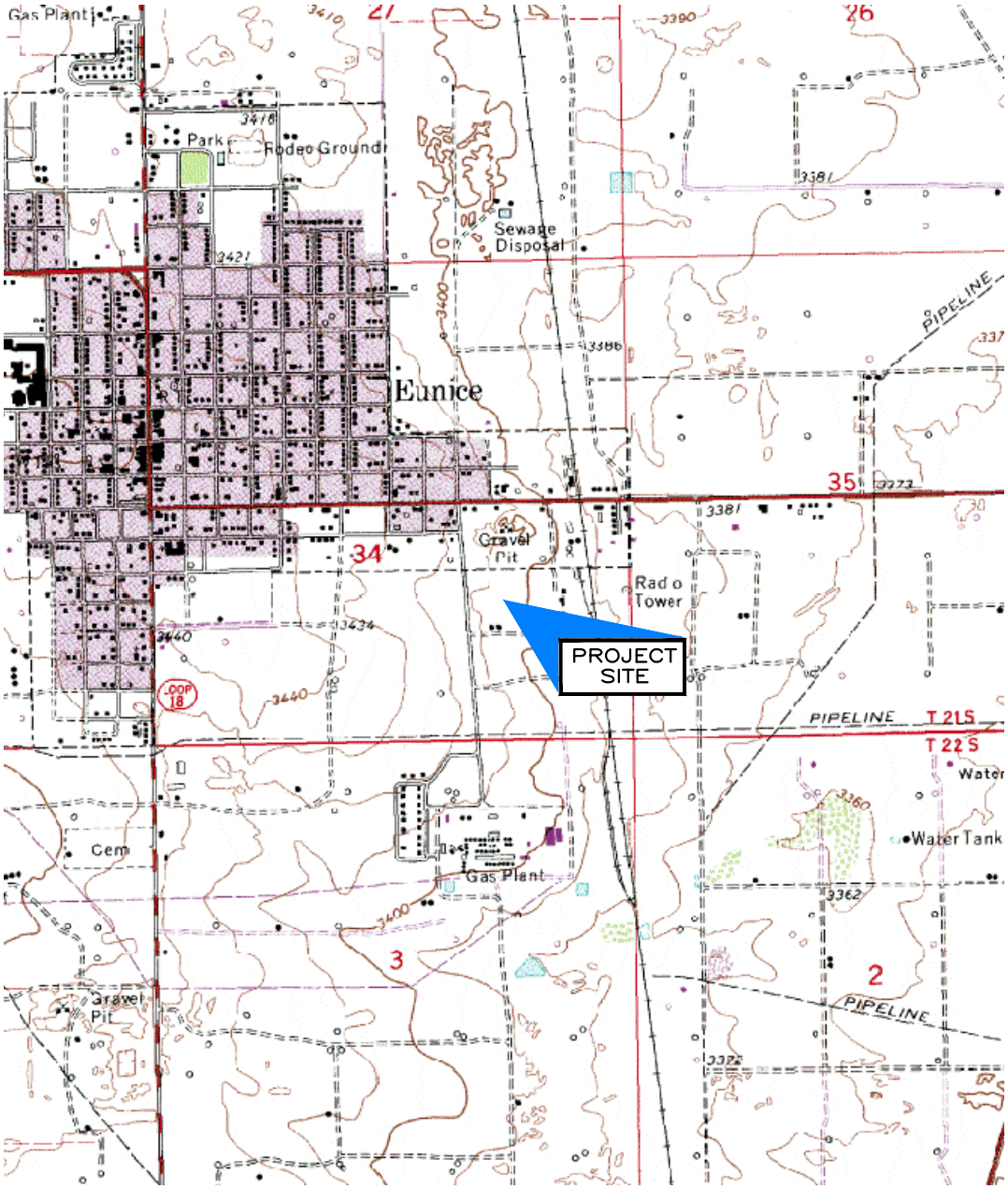
Bernard Bockisch, PMP
Sr. Project Manager

Figures

EUNICE QUADRANGLE
NEW MEXICO

LAT= 32° 25' 56.9" N
LONG= 103° 08' 47.9"W

PHOTOREVISED 1977



USGS MAP SERIES 1:24000

0 1/2 1 2
(Miles)

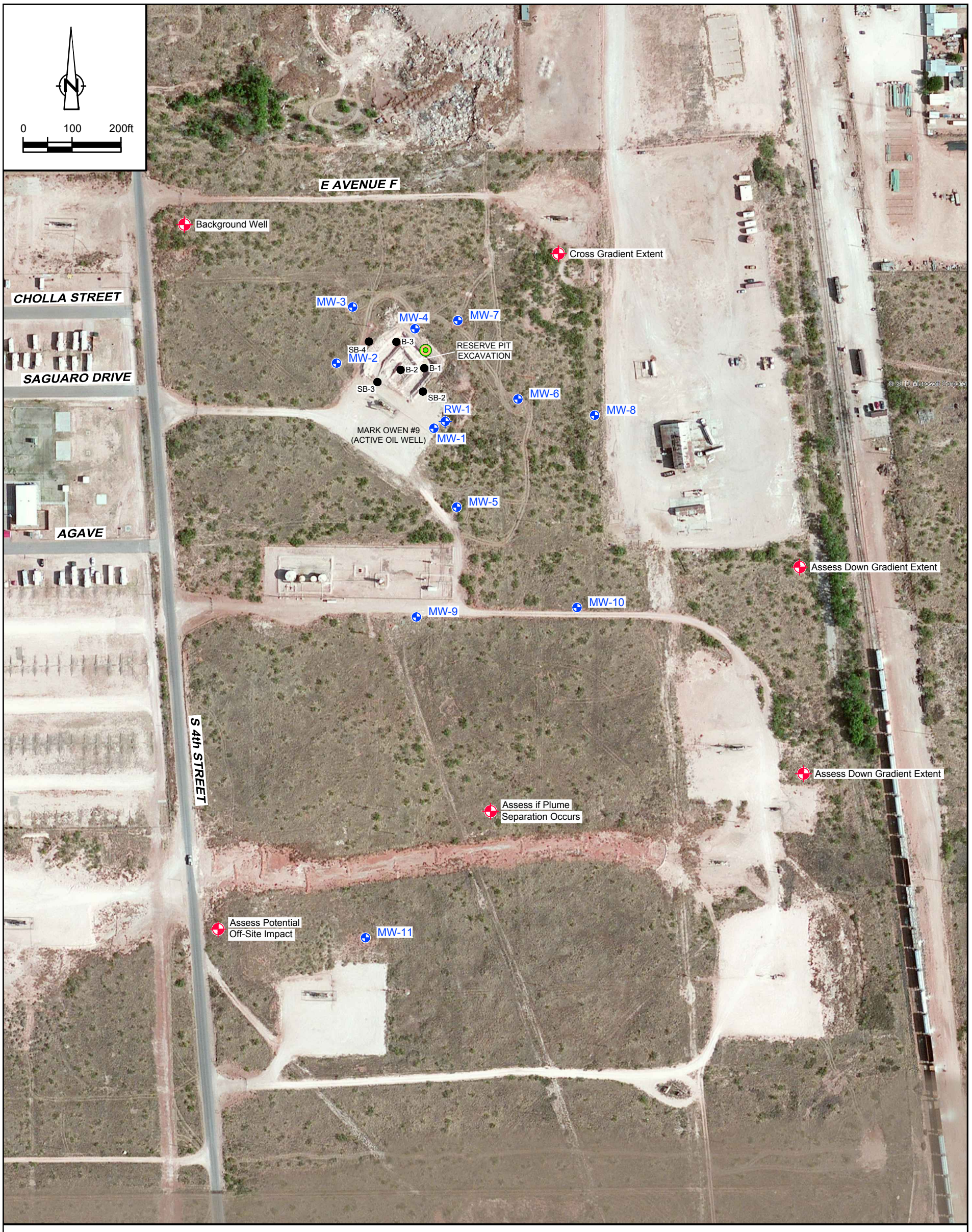
0 2000 4000 6000 8000
(Feet)

CONTOUR INTERVAL 5 FEET

Figure 1

SITE LOCATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL006 FEB 27/2014



LEGEND

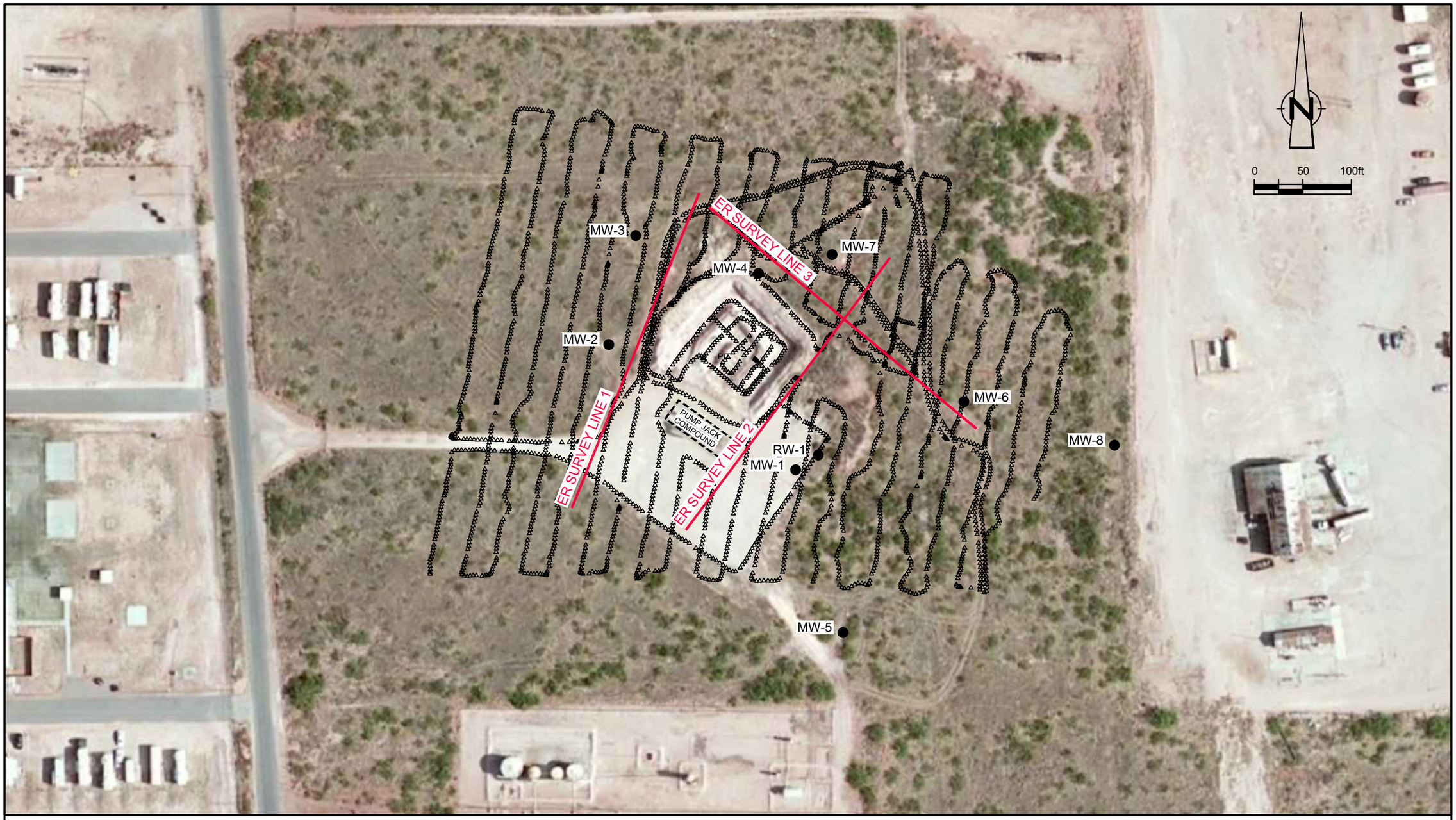
- MONITOR WELL LOCATION
- SOIL BORING LOCATION
- PROPOSED MONITOR WELL
- PROPOSED SOIL BORING

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012

Figure 2

SITE DETAILS MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company



SOURCE: ESRI, I-CUBED, USDA, USGS, AEX, GEOEYE, GEOMAPPING ASROGRID, ION, IGP AND GIS USER COMMUNITY
COORDINATE: NAD83 STATE PLANE NEW MEXICO EAST

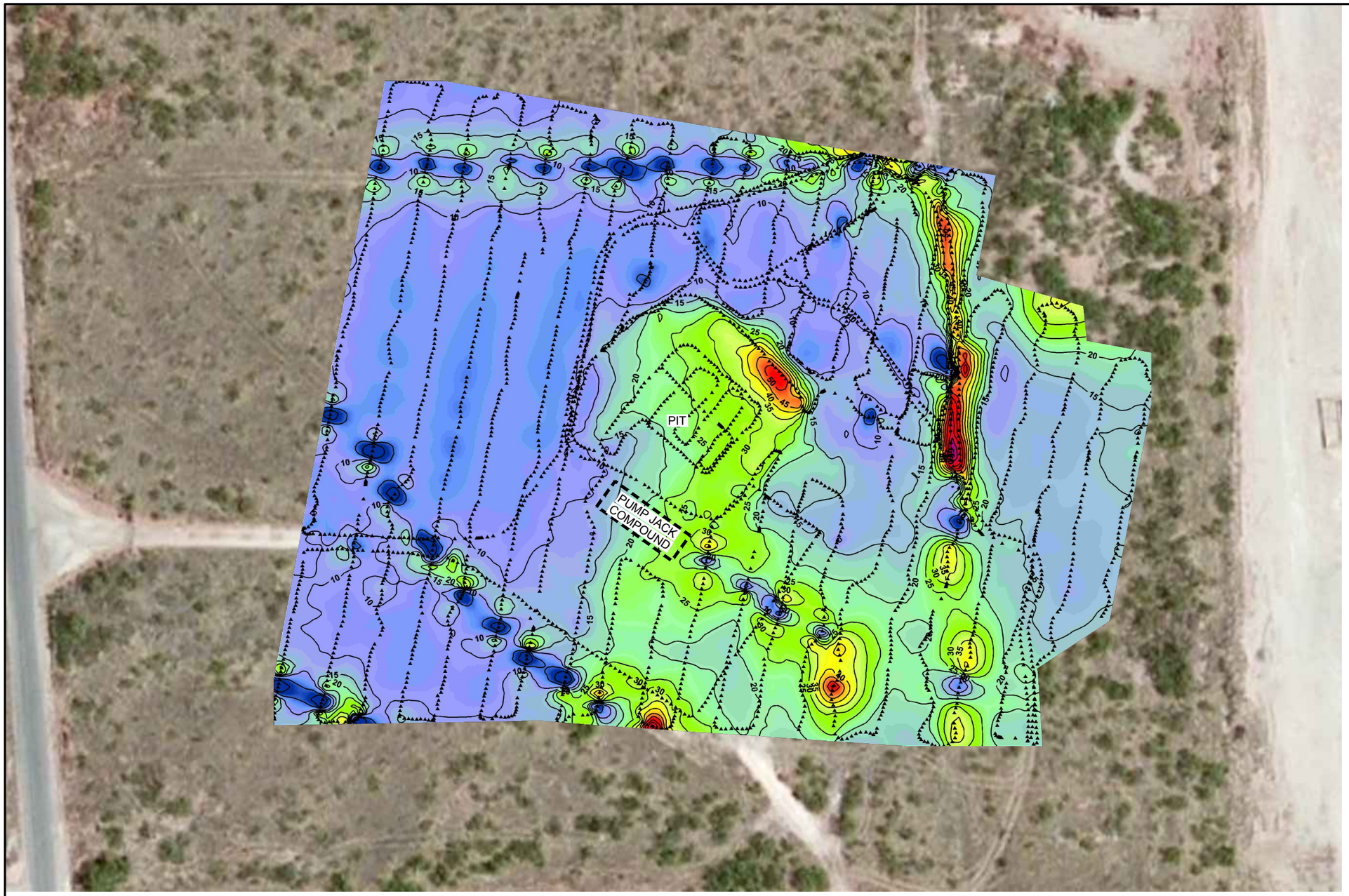
LEGEND

- EM31 SURVEY LINE LOCATION
- ELECTRICAL RESISTIVITY SURVEY LINE LOCATION
- MW-3 MONITORING WELL LOCATION

Figure 3

GEOPHYSICAL SURVEY COVERAGE
MARK OWEN #9 RESERVE PIT
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Lea County, New Mexico

46121-00(010)GN-WA001 FEB 28/2014



SOURCE: ESRI, I-CUBED, USDA, USGS, AEX, GEOEYE, GEOMAPPING ASROGRID, ION, IGP AND GIS USER COMMUNITY
COORDINATE: NAD83 STATE PLANE NEW MEXICO EAST

Figure 4

EM31 CONDUCTIVITY SURVEY RESULTS
MARK OWEN #9 RESERVE PIT
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Lea County, New Mexico

46121-00(010)GN-WA002 FEB 28/2014

LINE 1

INVERSE MODEL RESISTIVITY SECTION

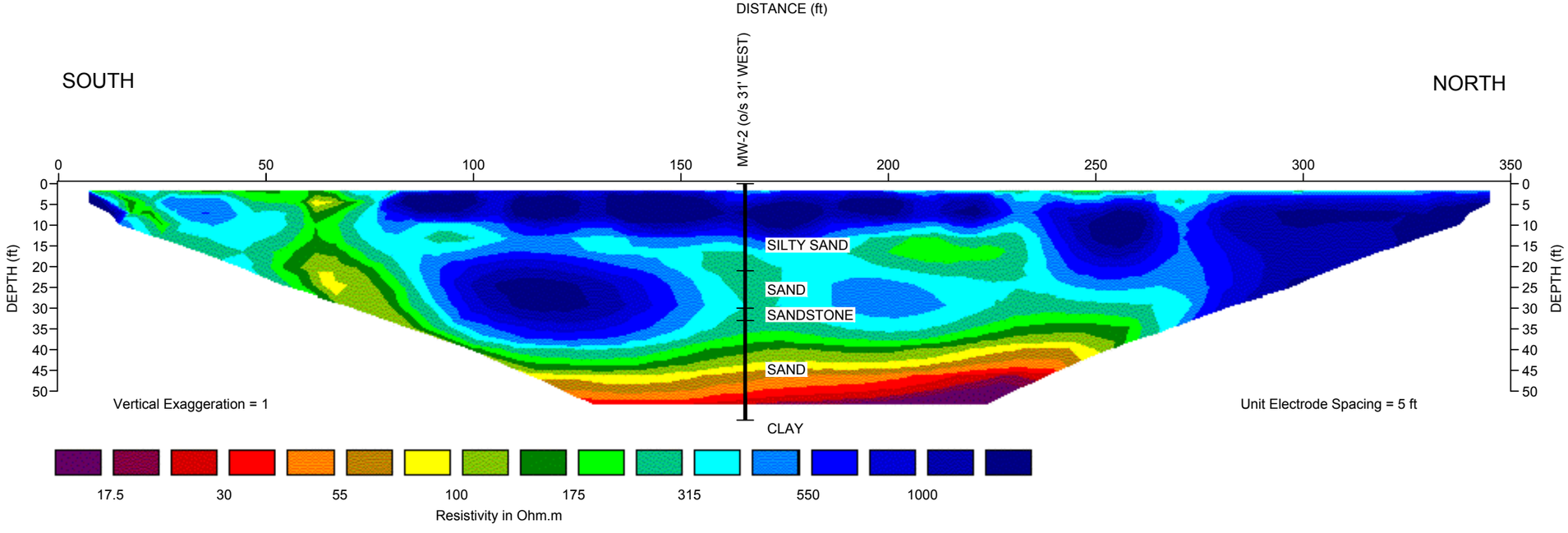


Figure 5

ELECTRICAL RESISTIVITY RESULTS - LINE 1
MARK OWEN #9 RESERVE PIT
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Lea County, New Mexico

LINE 2

INVERSE MODEL RESISTIVITY SECTION

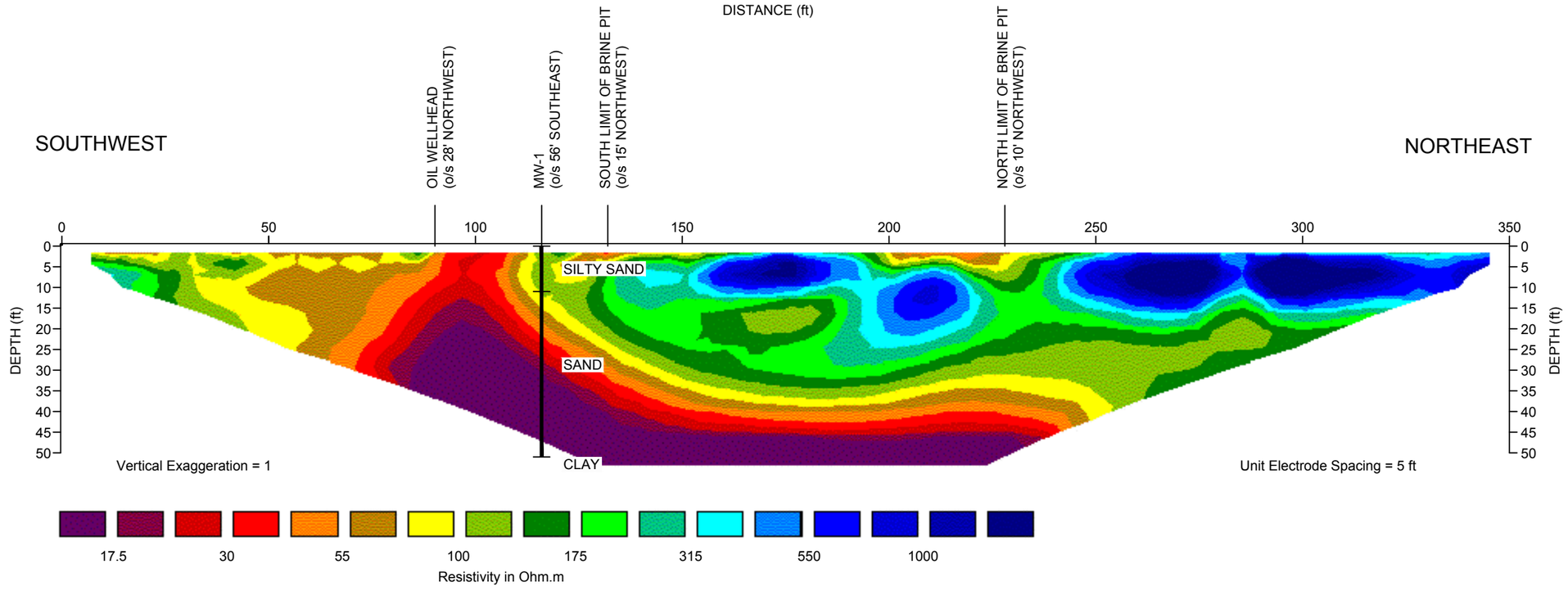


Figure 6

ELECTRICAL RESISTIVITY RESULTS - LINE 2
MARK OWEN #9 RESERVE PIT
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Lea County, New Mexico

46121-00(010)GN-WA003 FEB 28/2014

LINE 3

INVERSE MODEL RESISTIVITY SECTION

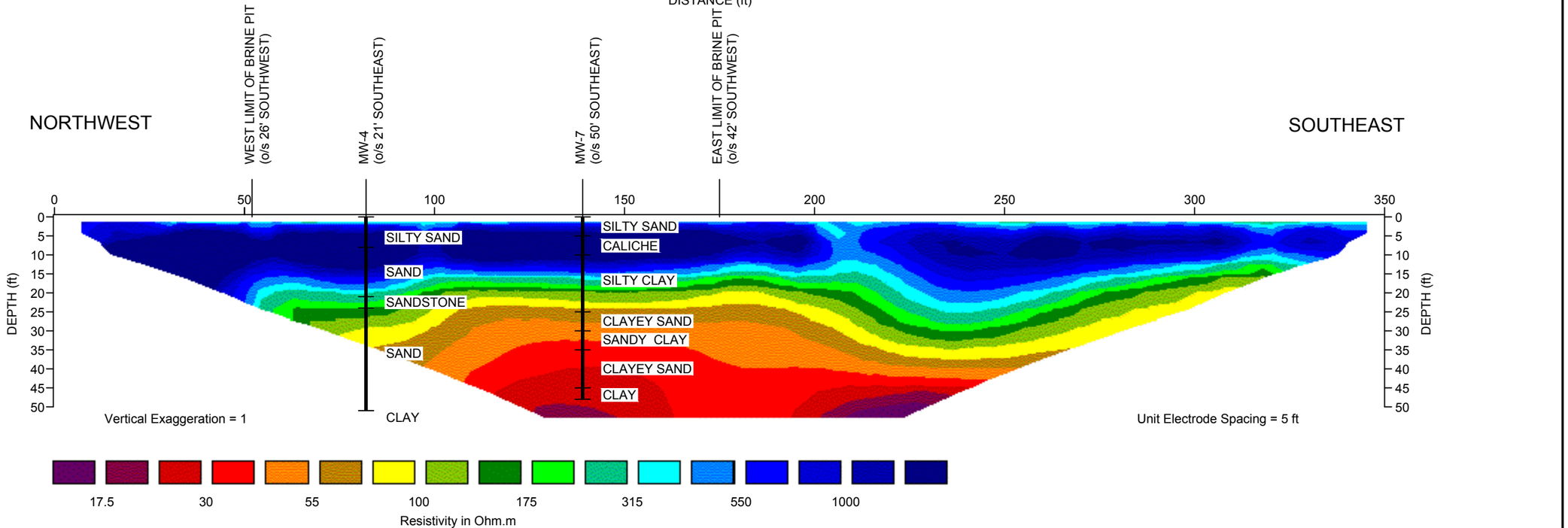
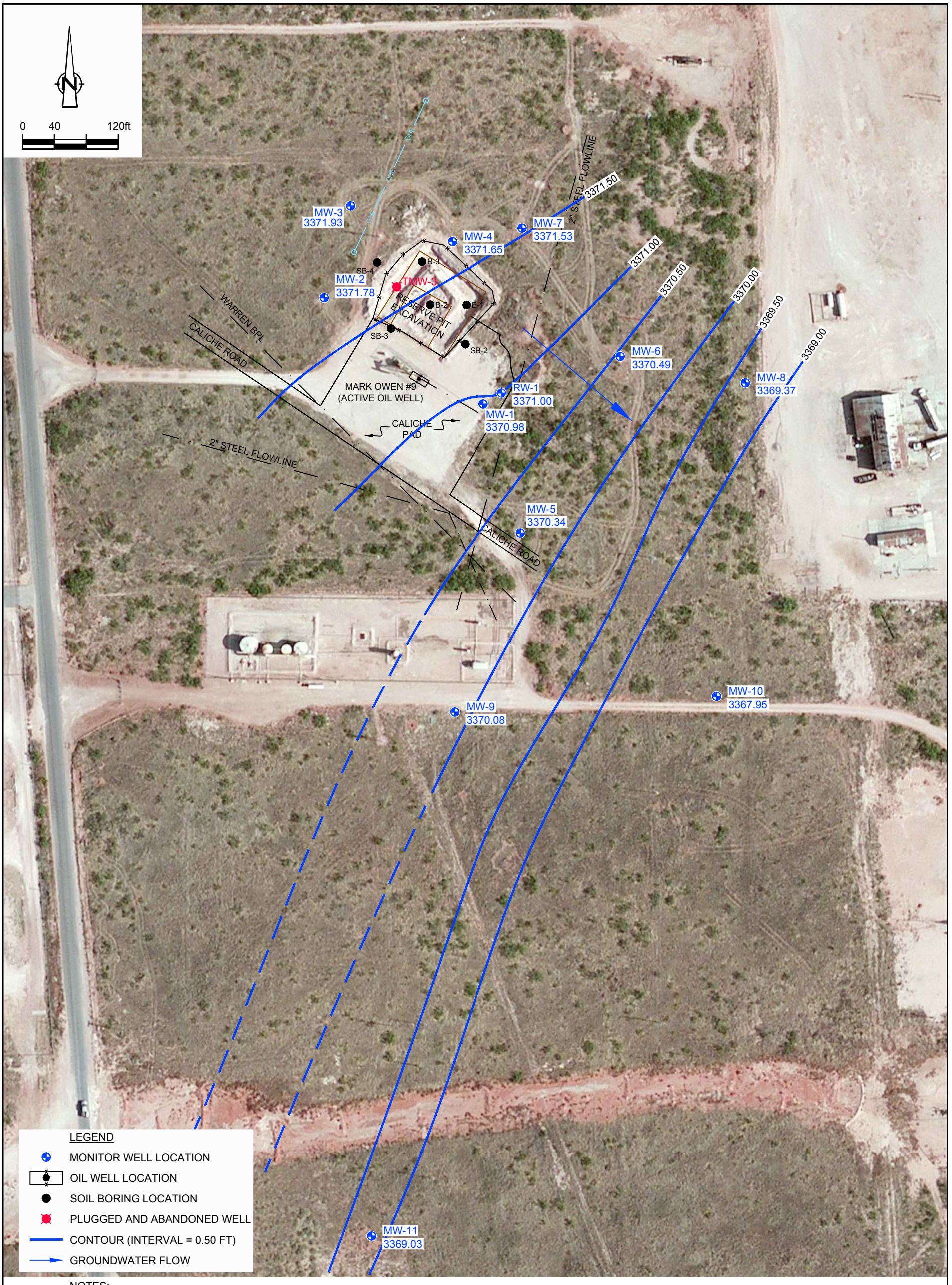


Figure 7

ELECTRICAL RESISTIVITY RESULTS - LINE 3
MARK OWEN #9 RESERVE PIT
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Lea County, New Mexico



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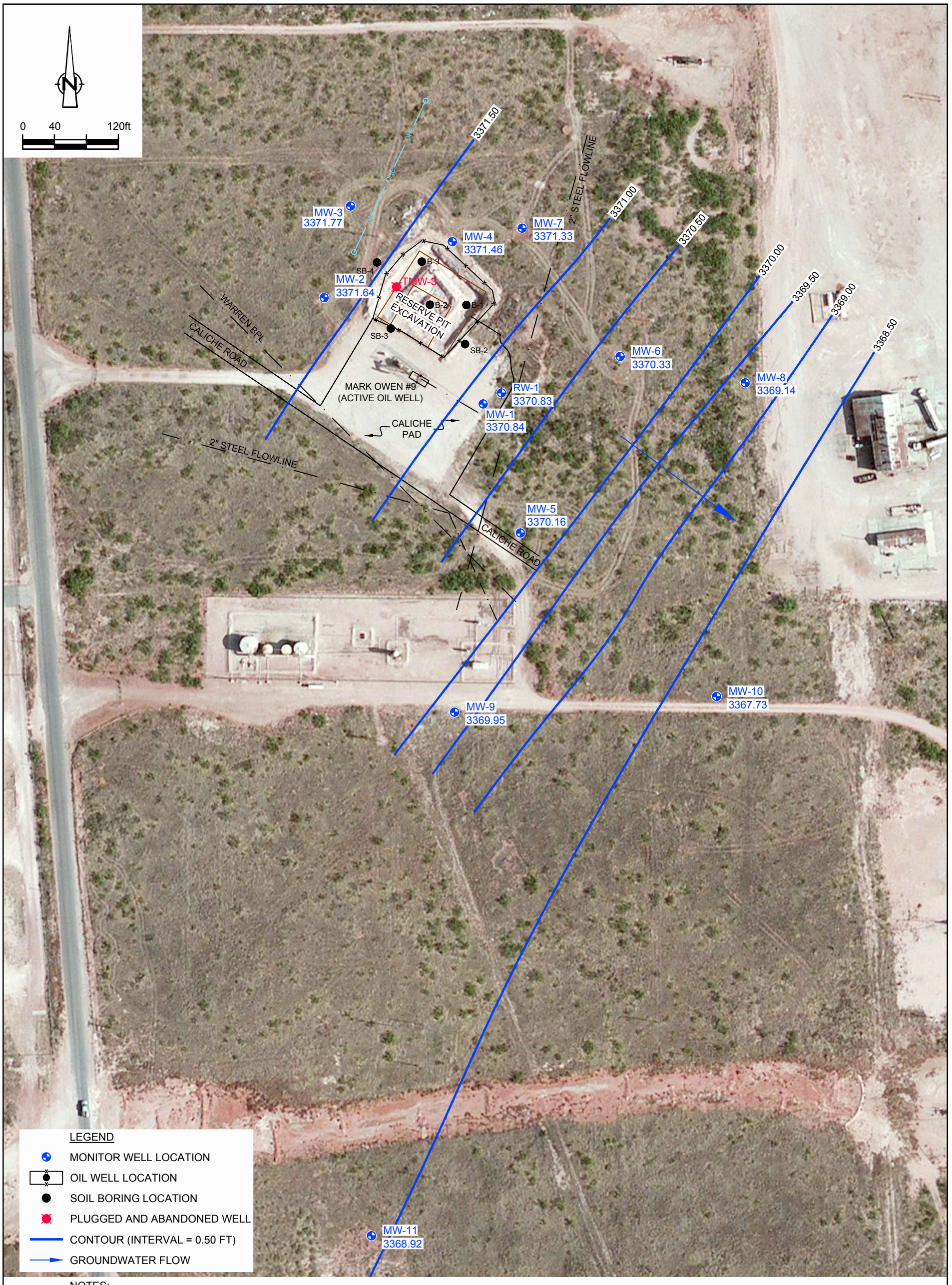
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE GAUGED MARCH 18, 2013

Figure 8

MARCH 2013 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company



NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE GAUGED JUNE 14, 2013

Figure 9

JUNE 2013 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE GAUGED SEPTEMBER 11, 2013.

Figure 10

SEPTEMBER 2013 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL002 OCT 14/2014

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE GAUGED NOVEMBER 19, 2013.

Figure 11

NOVEMBER 2013 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

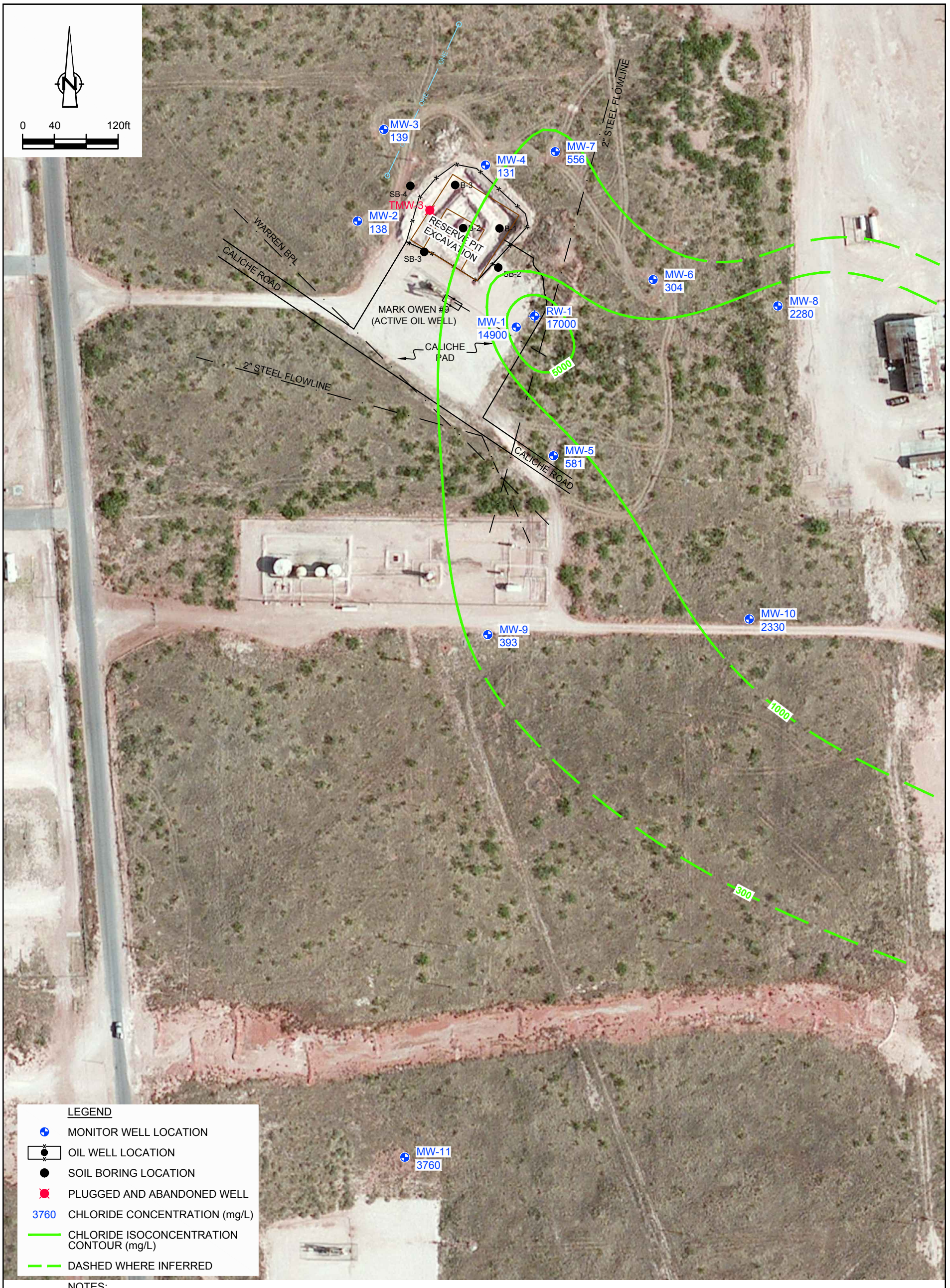
046121-10(010)GN-DL002 OCT 14/2014

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE SAMPLED ON MARCH 19, 2013

Figure 12

MARCH 2013 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company



NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE SAMPLED ON JUNE 14, 2013

Figure 13

JUNE 2013 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL003 OCT 21/2014

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE SAMPLED ON SEPTEMBER 12, 2013

Figure 14

SEPTEMBER 2013 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. MW-10 AND MW-11 WERE INSTALLED IN DECEMBER 2012
5. WELLS WERE SAMPLED ON NOVEMBER 19, 2013

Figure 15

NOVEMBER 2013 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL003 OCT 21/2014

Figure 16

MARCH 2013 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

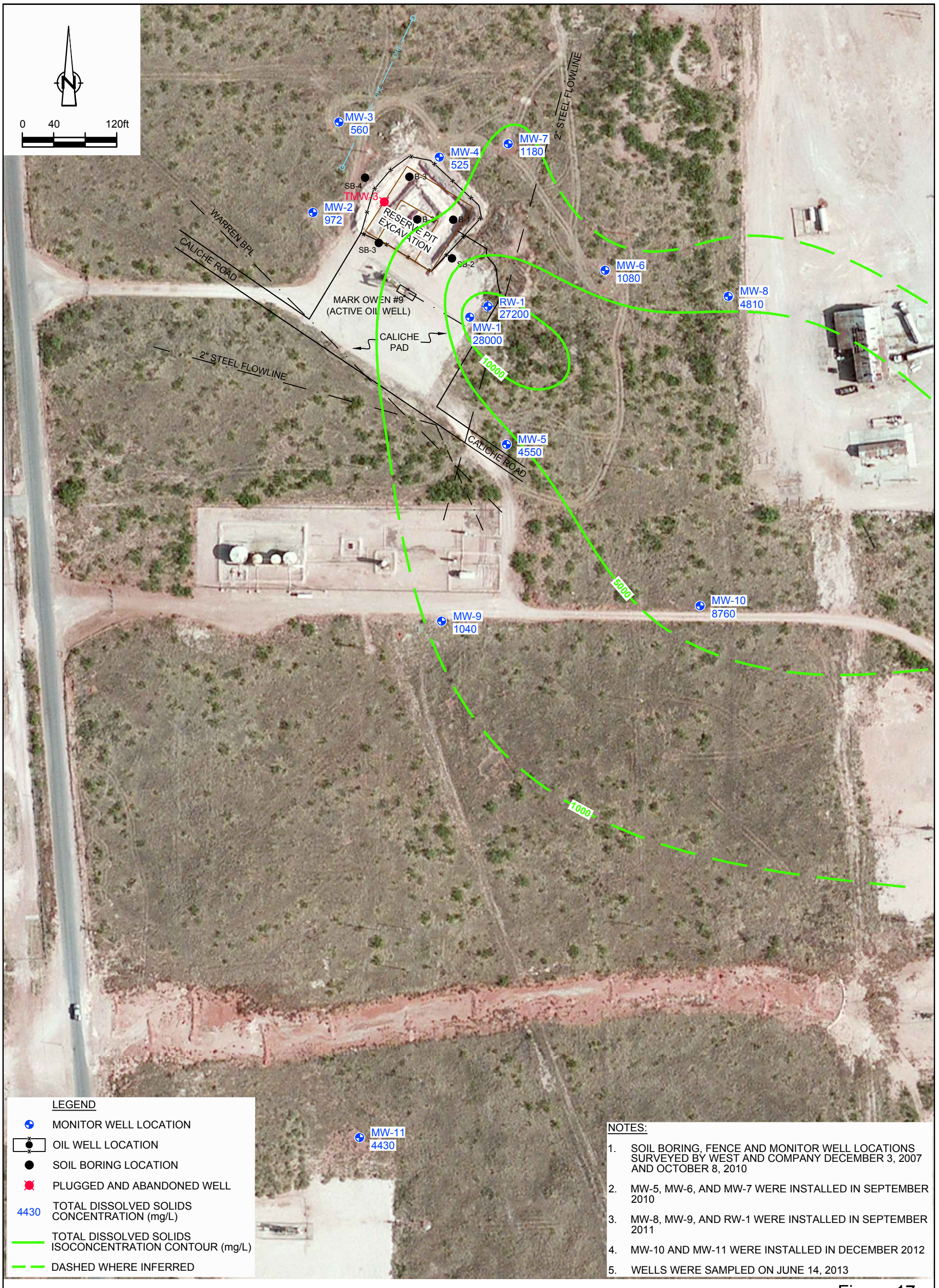


Figure 17

JUNE 2013 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL004 OCT 21/2014

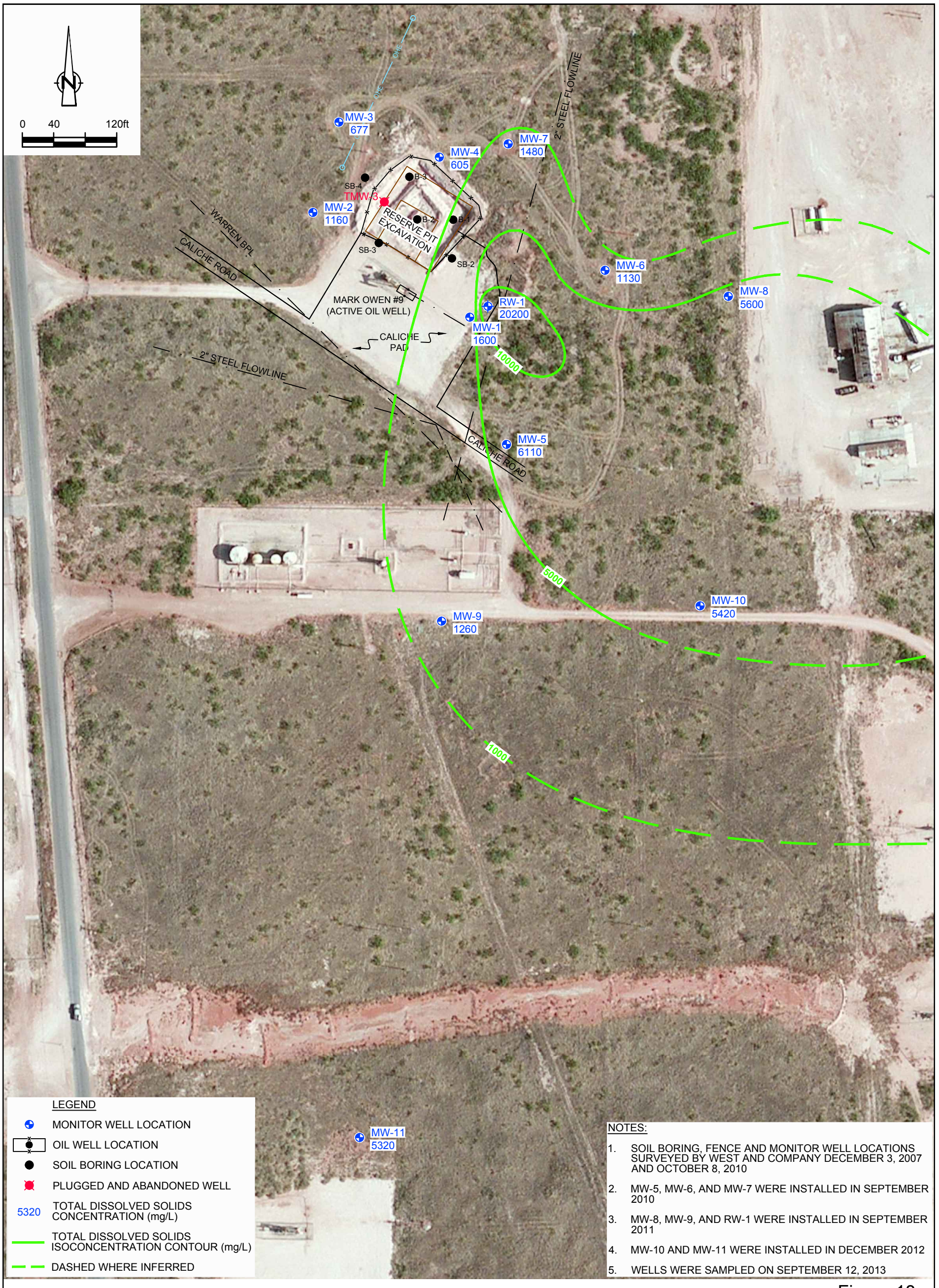


Figure 18

SEPTEMBER 2013 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL004 OCT 21/2014

Figure 19

NOVEMBER 2013 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(010)GN-DL004 OCT 21/2014

Tables

TABLE 1

SOIL ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

SAMPLE ID	DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDE (mg/kg)	TPH (8015 Modified)		
									TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH (GRO/DRO) (mg/kg)
New Mexico Oil Conservation Division Recommended Remediation Action Levels (Total Ranking Score 30)											
			10 mg/Kg	---	---	---	50.0 mg/Kg	---	---	---	100 mg/Kg
Soil Boring Samples											
SB-1/MW-1 9-10'	10/22/2007	9-10	<0.00248	<0.00683	<0.00592	<0.001819	BDL	74.4	0.324J	220	220
SB-1/MW-1 19-20'	10/22/2007	19-20	<0.00254	<0.00699	<0.00607	<0.001869	BDL	302	0.392J	<1.25	<1.25
SB-1/MW-1 29-30'	10/22/2007	29-30	<0.00229	<0.0063	<0.00547	<0.0168	BDL	168	0.317J	<1.13	<1.13
SB-2 9-10'	10/23/2007	9-10	<0.00241	<0.00663	<0.00575	<0.01766	BDL	20.1	0.399J	<1.19	<1.19
SB-2 19-20'	10/23/2007	19-20	<0.00238	<0.00656	<0.00569	<0.01747	BDL	22.7	0.423J	<1.18	<1.18
SB-2 29-30'	10/23/2007	29-30	<0.00247	<0.00681	<0.00591	<0.01815	BDL	46.4	0.361J	<1.22	<1.22
SB-3 9-10'	10/23/2007	9-10	<0.00216	<0.00594	<0.00515	<0.01582	BDL	21.3	0.397J	78	78
SB-3 19-20'	10/23/2007	19-20	<0.00215	<0.00592	0.01010J	0.0201J	BDL	17.1	0.306J	<1.06	<1.06
SB-3 29-30'	10/23/2007	29-30	<0.00258	0.00717J	<0.00616	<0.0189	BDL	30.3	0.314J	16	16
SB-4 9-10'	10/23/2007	9-10	<0.00223	<0.00613	<0.00532	<0.01634	BDL	26.7	0.372J	13	13
SB-4 19-20'	10/23/2007	19-20	<0.00255	<0.00704	<0.0061	<0.01874	BDL	25.2	0.334J	<1.26	<1.26
SB-4 30-31'	10/23/2007	30-31	<0.00239	<0.00659	0.00828J	<0.01755	BDL	29.8	0.354J	<1.18	<1.18
SB-5/MW-2 9-10'	10/23/2007	9-10	<0.00229	<0.00631	<0.00547	<0.01680	BDL	12	0.368J	<1.13	<1.13
SB-5/MW-2 19-20'	10/23/2007	19-20	<0.0025	<0.00689	<0.00598	<0.01836	BDL	20.9	0.331J	<1.24	<1.24
SB-5/MW-2 33-34'	10/23/2007	33-34	<0.00216	<0.00596	<0.00517	<0.01589	BDL	35	0.330J	320	320
SB-6/MW-3 9-10'	10/24/2007	9-10	<0.00222	<0.00612	<0.00531	<0.01631	BDL	20.5	0.241J	<1.1	<1.1
SB-6/MW-3 19-20'	10/24/2007	19-20	<0.00209	<0.00574	<0.00498	<0.01531	BDL	14.1	0.315J	<1.03	<1.03
SB-6/MW-3 31-32'	10/24/2007	31-32	<0.00253	<0.00697	<0.00604	<0.01856	BDL	43.1	0.330J	250	250
SB-7/MW-4 9-10'	10/24/2007	9-10	<0.00258	<0.00711	<0.00617	<0.01895	BDL	24.2	0.352J	26	26
SB-7/MW-4 19-20'	10/24/2007	19-20	<0.00206	<0.00569	<0.00493	<0.01516	BDL	1080	0.358J	15	15
SB-7/MW-4 29-30'	10/24/2007	29-30	<0.00263	<0.00726	<0.00629	<0.01933	BDL	217	0.389J	410	410

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

SAMPLE ID	DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDE (mg/kg)	TPH (8015 Modified)		
									TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH (GRO/DRO) (mg/kg)
New Mexico Oil Conservation Division Recommended Remediation Action Levels (Total Ranking Score 30)											
			10 mg/Kg	---	---	---	50.0 mg/Kg	---	---	---	100 mg/Kg
Soil Boring Samples											
MW-5 20'	9/22/2010	20	<0.0021	<0.0021	<0.0021	<0.0054	BDL	98.1	<0.200	11	11
MW-5 25'	9/22/2010	25	<0.0022	<0.0022	<0.0022	<.0.0055	BDL	132	<0.200	8.2	8.2
MW-5 35'	9/22/2010	35	<0.0023	<0.0023	<0.0023	<0.0056	BDL	172	<0.200	<4.6	BDL
MW-6 20'	9/22/2010	20'	<0.0021	<0.0021	<0.0021	<0.0052	BDL	71.6	<0.200	<4.2	BDL
MW-6 30'	9/22/2010	30	<0.0022	<0.0022	<0.0022	<0.0056	BDL	108	<0.200	11	11
MW-6 35'	9/22/2010	35	<0.0020	<0.0020	<0.0020	<0.0051	BDL	57.5	<0.200	7.8	7.8
MW-7 5'	9/22/2010	5	<0.0021	<0.0021	<0.0021	<0.0053	BDL	11.5	<0.200	<4.2	BDL
MW-7 10'	9/22/2010	10	<0.0020	<0.0020	<0.0020	<0.0051	BDL	30.9	<0.200	<4.2	BDL
MW-7 35'	9/22/2010	35	<0.0022	<0.0022	<0.0022	<0.0055	BDL	14.1	<0.200	<4.4	BDL
MW-8 30'-35'	9/12/2011	30-35	<0.00109	<0.00219	<0.00109	<0.00328	BDL	309	<16.4	31	60
MW-8 40'-45'	9/12/2011	40-45	<0.00117	<0.00233	<0.00117	<0.00333	BDL	275	<17.6	<17.6	BDL
MW-8 45-50	9/12/2011	45-50	<0.00111	<0.00222	<0.00111	<0.00333	BDL	105	<16.6	<16.6	BDL
MW-9 30-35	9/12/2011	30-35	<0.00107	<0.00215	<0.00107	<0.00322	BDL	20.5	<16.1	<16.1	BDL
MW-9 35-40	9/12/2011	35-40	<0.00109	<0.00218	<0.00109	<0.00327	BDL	33.7	<16.4	<16.4	BDL
MW-9 45-50	9/12/2011	45-50	<0.00124	<0.00249	<0.00124	<0.00373	BDL	522	<18.7	<18.7	BDL
RW-1 10-15	9/13/2011	10-15	<0.00104	<0.00208	<0.00104	<0.00312	BDL	10.4	<15.6	<15.6	BDL
RW-1 30-35	9/13/2011	30-35	<0.00106	<0.00212	<0.00106	<0.00318	BDL	93.5	<15.9	<15.9	BDL
RW-1 40-45	9/13/2011	40-45	<0.00134	<0.00268	<0.00134	<0.00402	BDL	3770	<20.3	<20.3	BDL
MW-10 20-25	12/3/2012	20-25	<0.00105	<0.00211	<0.00105	<0.00105	<0.00105	27.3	<15.9	<15.9	BDL
MW-10 30-35	12/3/2012	30-35	<0.00116	<0.00233	<0.00116	<0.00116	<0.00116	52.9	<17.5	<17.5	BDL
MW-11 35-40	12/3/2012	35-40	<0.00101	<0.00203	<0.00101	<0.00101	<0.00101	4.8	<15.3	<15.3	BDL
MW-11 50-55	12/3/2012	50-55	<0.00111	<0.00223	<0.00111	<0.00111	<0.00111	98.8	<16.8	<16.8	BDL
S-046121-111813-CM-B-1 (5-6.5)	11/18/13	5-6.5	NA	NA	NA	NA	NA	570	NA	NA	NA
S-046121-111813-CM-B-1 (10-11.5)	11/18/13	10-11.5	NA	NA	NA	NA	NA	904	NA	NA	NA
S-046121-111813-CM-B-1 (15-16.5)	11/18/13	15-16.5	NA	NA	NA	NA	NA	3,300	NA	NA	NA
S-046121-111813-CM-B-1 (20.21.5)	11/18/13	20-21.5	NA	NA	NA	NA	NA	968	NA	NA	NA

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

SAMPLE ID	DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDE (mg/kg)	TPH (8015 Modified)		
									TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH (GRO/DRO) (mg/kg)
New Mexico Oil Conservation Division Recommended Remediation Action Levels (Total Ranking Score 30)											
			10 mg/Kg	---	---	---	50.0 mg/Kg	---	---	---	100 mg/Kg
Soil Boring Samples											
S-074636-112013-CM-B-2(5-6.5)	11/18/13	5-6.5	NA	NA	NA	NA	NA	26.9	NA	NA	NA
S-074636-112013-CM-B-2(10-11.5)	11/18/13	10-11.5	NA	NA	NA	NA	NA	16.9	NA	NA	NA
S-074636-112013-CM-B-2(15-16.5)	11/18/13	15-16.5	NA	NA	NA	NA	NA	105	NA	NA	NA
S-074636-112013-CM-B-2(20-21.5)	11/18/13	20-21.5	NA	NA	NA	NA	NA	167	NA	NA	NA
S-046121-111813-CM-B-3 (5-6.5)	11/18/13	5-6.5	NA	NA	NA	NA	NA	15.9	NA	NA	NA
S-046121-111813-CM-B-3 (10-11.5)	11/18/13	10-11.5	NA	NA	NA	NA	NA	16.0	NA	NA	NA
S-046121-111813-CM-B-3 (16-17.5)	11/18/13	15-16.5	NA	NA	NA	NA	NA	64.6	NA	NA	NA
S-046121-111813-CM-B-3 (20-21.5)	11/18/13	20-21.5	NA	NA	NA	NA	NA	109	NA	NA	NA

TABLE 2

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

WELL *TOC elev* [1]	DATE	Well Diameter (inches)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Depth to LNAPL (ft below TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft above MSL[2])	Screen interval (bgs[3])
MW-01	11/1/2007	4	54.00	32.55	---	---	3371.13	
3,403.68	4/25/2008		54.03	32.60	---	---	3371.08	
	9/16/2008			32.81	---	---	3370.87	
	4/20/2009		55.00	32.72	---	---	3370.96	
	10/26/2009		54.10	32.75	---	---	3370.93	
	2/25/2010		53.90	32.68	---	---	3371.00	
	6/3/2010		54.02	32.80	---	---	3370.88	
	8/31/2010		53.85	32.51	---	---	3371.17	
	11/22/2010		53.90	32.40	---	---	3371.28	
	3/10/2011		53.86	32.44	---	---	3371.24	
	6/3/2011		53.88	32.80	---	---	3370.88	16'-51'
	8/23/2011		53.88	32.78	---	---	3370.90	
	12/16/2011			32.69	---	---	3370.99	
	3/22/2012		54.17	32.66	---	---	3371.02	
	6/11/2012			32.79	---	---	3370.89	
	9/25/2012		53.87	32.90	---	---	3370.78	
	12/13/2012		54.10	32.71	---	---	3370.97	
	3/18/2013		53.89	32.70	---	---	3370.98	
	6/6/2013		54.08	32.84	---	---	3370.84	
	9/11/2013		53.90	32.87	---	---	3370.81	
	11/19/2013		53.94	32.61			3371.07	
MW-02	11/1/2007	4	60.00	36.24	---	---	3371.99	
3,408.23	4/25/2008		60.29	36.40	---	---	3371.83	
	9/16/2008			36.48	---	---	3371.75	
	4/20/2009		60.22	36.45	---	---	3371.78	
	10/26/2009		60.30	36.46	---	---	3371.77	
	2/25/2010		61.25	36.42	---	---	3371.81	
	6/3/2010		60.26	36.41	---	---	3371.82	
	8/31/2010		60.28	36.05	---	---	3372.18	
	11/22/2010		60.19	35.93	---	---	3372.30	
	3/10/2011		60.19	36.18	---	---	3372.05	
	6/3/2011		60.18	36.36	---	---	3371.87	22'-57'
	8/23/2011		60.18	36.31	---	---	3371.92	
	12/16/2011		60.18	36.34	---	---	3371.89	
	3/22/2012		60.33	36.35	---	---	3371.88	
	6/11/2012			36.49	---	---	3371.74	
	9/25/2012		60.18	36.51	---	---	3371.72	
	12/13/2012		60.18	36.33	---	---	3371.90	
	3/18/2013		60.18	36.45	---	---	3371.78	
	6/6/2013		60.29	36.59	---	---	3371.64	
	9/11/2013		60.14	36.45	---	---	3371.78	
	11/19/2013		60.68	36.11			3372.12	

TABLE 2

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

WELL *TOC elev* [1]	DATE	Well Diameter (inches)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Depth to LNAPL (ft below TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft above MSL[2])	Screen interval (bgs[3])
MW-03	11/1/2007	4	56.50	34.69	---	---	3372.35	
3,407.04	4/25/2008		57.55	34.89	---	---	3372.15	
	9/16/2008			35.00	---	---	3372.04	
	4/20/2009		57.51	35.02	---	---	3372.02	
	10/26/2009		57.44	35.05	---	---	3371.99	
	2/25/2010		58.60	34.88	---	---	3372.16	
	6/3/2010		57.52	35.03	---	---	3372.01	
	8/31/2010		57.55	34.62	---	---	3372.42	
	11/22/2010		57.55	34.53	---	---	3372.51	
	3/10/2011		57.43	34.81	---	---	3372.23	
	6/3/2011		57.47	34.91	---	---	3372.13	19'-54'
	8/23/2011		57.45	34.96	---	---	3372.08	
	12/16/2011			35.02	---	---	3372.02	
	3/22/2012		57.58	35.02	---	---	3372.02	
	6/11/2012			35.15	---	---	3371.89	
	9/25/2012		57.46	35.15	---	---	3371.89	
	12/13/2012		57.58	35.03	---	---	3372.01	
	3/18/2013		57.58	35.11	---	---	3371.93	
	6/6/2013		57.53	35.27	---	---	3371.77	
	9/11/2013		57.49	35.17	---	---	3371.87	
	11/19/2013		58.02	34.85			3372.19	
MW-04	11/1/2007	4	54.00	32.69	---	---	3372.05	
3,404.74	4/25/2008		54.22	32.83	---	---	3371.91	
	9/16/2008			33.02	---	---	3371.72	16'-51'
	4/20/2009		54.23	33.02	---	---	3371.72	
	10/26/2009		54.25	33.05	---	---	3371.69	
	2/25/2010		54.92	33.00	---	---	3371.74	
	6/3/2010		54.07	33.05	---	---	3371.69	
	8/31/2010		54.15	32.85	---	---	3371.89	
	11/22/2010		54.15	32.55	---	---	3372.19	
	3/10/2011		54.14	32.79	---	---	3371.95	
	6/3/2011		54.15	33.04	---	---	3371.70	
	8/23/2011		54.15	33.00	---	---	3371.74	
	12/16/2011			33.02	---	---	3371.72	
	3/22/2012		54.25	33.04	---	---	3371.70	16'-51'
	6/11/2012			33.15	---	---	3371.59	
	9/25/2012		54.15	33.28	---	---	3371.46	
	12/13/2012		54.14	33.08	---	---	3371.66	
	3/18/2013		54.23	33.09	---	---	3371.65	
	6/6/2013		54.25	33.28	---	---	3371.46	
	9/11/2013		54.02	33.44	---	---	3371.30	
	11/19/2013		54.19	32.92			3371.82	

TABLE 2

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

WELL *TOC elev* [1]	DATE	Well Diameter (inches)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Depth to LNAPL (ft below TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft above MSL[2])	Screen interval (bgs[3])
MW-05	11/22/2010	4	52.74	31.62	---	---	3370.48	
3402.1	3/10/2011		52.64	31.59	---	---	3370.51	
	6/3/2011		52.65	31.88	---	---	3370.22	
	8/23/2011		52.63	31.82	---	---	3370.28	
	12/15/2011			31.80	---	---	3370.30	
	3/20/2012		52.63	31.73	---	---	3370.37	
	6/11/2012			31.87	---	---	3370.23	15'-50'
	9/25/2012		52.63	32.05	---	---	3370.05	
	12/13/2012		52.63	31.89	---	---	3370.21	
	3/18/2013		52.62	31.76	---	---	3370.34	
	6/6/2013		52.76	31.94	---	---	3370.16	
	9/11/2013		52.84	32.07	---	---	3370.03	
	11/19/2013		52.52	31.79			3370.31	
MW-06	11/22/2010	4	48.68	29.26	---	---	3370.98	
3400.24	3/10/2011		48.37	29.37	---	---	3370.87	
	6/3/2011		48.36	29.69	---	---	3370.55	
	8/23/2011		48.36	29.65	---	---	3370.59	
	12/15/2011			29.71	---	---	3370.53	
	3/20/2013		48.45	29.65	---	---	3370.59	
	6/11/2012			29.78	---	---	3370.46	10'-45'
	9/25/2012		48.68	30.16	---	---	3370.08	
	12/13/2012		48.69	29.83	---	---	3370.41	
	3/18/2013		48.68	29.75	---	---	3370.49	
	6/6/2013		48.68	29.91	---	---	3370.33	
	9/11/2013		48.41	30.18	---	---	3370.06	
	11/19/2013		48.50	29.74			3370.50	
MW-07	11/22/2010	4	51.01	30.07	---	---	3372.06	
3402.13	3/10/2011		51.00	30.24	---	---	3371.89	
	6/3/2011		51.15	30.52	---	---	3371.61	
	8/23/2011		51.10	30.50	---	---	3371.63	
	12/15/2011			30.55	---	---	3371.58	
	3/20/2012		51.00	30.52	---	---	3371.61	
	6/11/2012			30.65	---	---	3371.48	13'48'
	9/25/2012		51.04	30.87	---	---	3371.26	
	12/13/2012		51.20	30.66	---	---	3371.47	
	3/18/2013		51.20	30.60	---	---	3371.53	
	6/6/2013		51.21	30.80	---	---	3371.33	
	9/11/2013		51.10	30.92	---	---	3371.21	
	11/19/2013		51.00	30.50			3371.63	

TABLE 2

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

WELL *TOC elev* [1]	DATE	Well Diameter (inches)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Depth to LNAPL (ft below TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft above MSL[2])	Screen interval (bgs[3])
MW-08	12/16/2011	4		27.88	---	---	3369.36	20'-50'
3397.24	3/20/2012		53.41	27.79	---	---	3369.45	
	6/11/2012			28.00	---	---	3369.24	
	9/25/2012		53.40	28.17	---	---	3369.07	
	12/13/2012		53.42	27.98	---	---	3369.26	
	3/18/2013		53.41	27.87	---	---	3369.37	
	6/6/2013		53.44	28.10	---	---	3369.14	
	9/11/2013		53.31	28.25	---	---	3368.99	
	11/19/2013		53.44	28.03			3369.21	
MW-09	12/16/2011	4		34.72	---	---	3370.04	20'-50'
3404.76	3/20/2012		53.40	34.64	---	---	3370.12	
	6/11/2012			34.76	---	---	3370.00	
	9/25/2012		53.45	34.90	---	---	3369.86	
	12/13/2012		53.45	34.78	---	---	3369.98	
	3/18/2013		53.45	34.68	---	---	3370.08	
	6/6/2013		53.47	34.81	---	---	3369.95	
	9/11/2013		53.35	34.89	---	---	3369.87	
	11/19/2013		53.41	34.69			3370.07	
MW-10	12/13/2012	4	61.80	31.19	---	---	3367.85	30'-60'
3399.04	3/18/2013		61.76	31.09	---	---	3367.95	
	6/6/2013		61.75	31.31	---	---	3367.73	
	9/11/2013		61.72	31.54	---	---	3367.50	
	11/19/2013		62.51	31.18			3367.86	
MW-11	12/13/2012	4	81.40	42.64	---	---	3369.10	40'-80'
3411.74	3/18/2013		80.82	42.71	---	---	3369.03	
	6/6/2013		80.83	42.82	---	---	3368.92	
	9/11/2013		80.50	42.83	---	---	3368.91	
	11/19/2013		82.09	42.61			3369.13	
RW-1	12/16/2011	6		32.04	---	---	3370.99	20'-50'
3403.03	3/20/2012		53.16	32.00	---	---	3371.03	
	6/11/2012			32.11	---	---	3370.92	
	9/25/2012		53.30	32.40	---	---	3370.63	
	12/13/2012		53.17	32.08	---	---	3370.95	
	3/18/2013		53.16	32.03	---	---	3371.00	
	6/6/2013		53.34	32.20	---	---	3370.83	
	9/11/2013		53.20	32.27	---	---	3370.76	
	11/19/2013		53.26	32.00			3371.03	

Notes:

[1]TOC - Top of Casing

[2]MSL - Mean Sea Level

[3]BGS - Below ground surface

Professional Survey conducted by West Company of Midland, Inc. on December 10, 2007.

TABLE 3

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Well ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard		0.01	0.75	0.75	0.62	---	---	---
MW-1	11/1/07	<0.00006	<0.0001	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	0.25	0.25
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
DUP	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
DUP	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<.0002	<.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/26/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/20/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-2	11/1/07	<0.00006	0.00035J	<0.00012	<0.00021	<0.02014	1.8	1.82014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	0.07	0.070
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
DUP	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/20/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA

TABLE 3

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Well ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard		0.01	0.75	0.75	0.62	---	---	---
MW-3	11/1/07	<0.00006	0.0005J	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	0.073	0.073
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	0.00146	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/20/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-4	11/1/07	<0.00006	0.00052J	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
DUP	11/1/07	<0.00006	0.00054J	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
DUP	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	0.052	0.052
DUP	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	0.052	0.052
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA

TABLE 3

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Well ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard								
		0.01	0.75	0.75	0.62	---	---	---
MW-5	9/23/10	<0.0002	<0.0002	<0.0002	<0.0006	<0.0020	0.002	0.002
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
DUP	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-6	9/23/10	<0.0002	<0.0002	<0.0002	<0.0006	<0.0020	0.280	0.280
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
DUP	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
DUP	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-7	9/23/10	<0.0002	<0.0002	<0.0002	<0.0006	<0.0020	0.340	0.340
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
DUP-1	9/26/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	12/13/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA

TABLE 3

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Well ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard								
		0.01	0.75	0.75	0.62	---	---	---
MW-7	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
DUP	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-8	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	12/13/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-9	12/16/11	0.0241	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	0.00108	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	0.0301	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	0.0854	<0.0020	<0.0010	0.00104	NA	NA	NA
	12/13/12	0.143	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
DUP	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-10	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
MW-11	12/14/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
RW-1	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	3/22/12	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
DUP-1	6/11/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	9/26/12	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	12/14/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	3/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA
DUP-1	6/6/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA

TABLE 3

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Well ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard								
		0.01	**0.75**	**0.75**	**0.62**	**---**	**---**	**---**
RW-1	9/12/13	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
	11/19/13	<0.0010	<0.0020	<0.0010	<0.0010	NA	NA	NA

Notes:

1) Highlighted concentrations above lab reporting limits.
2) BTEX analysis by EPA Method 8021B
3) TPH (GRO/DRO) analysis by EPA Method 8015 Modified.
4) Results shown in mg/L.
5) J = estimated value between RL & MDL
6) DUP = Duplicate sample

TABLE 4

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
MW-1	11/01/07	0.0144 B	0.0839	<0.00073	<0.00155	<0.0021	<0.000053	0.00752 B	<0.00125	201	321	84.4	1,010
	04/25/08	0.0118 B	0.127	<0.00073	0.0036 B	<0.0021	<0.000066	0.00536 B	<0.00125	167	623	124	NA
	09/16/08	0.014	0.40	<0.002	0.0024 B	<0.003	<0.0002	0.0072	<0.005	146	1,590	154	3,620
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	212	1,320	207	2,860
DUP	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	200	1,740	181	3,720
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	126	9,770	297	19,000
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	163	5,210	207	11,900
DUP	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	163	5,320	204	11,300
	06/03/10	NA	NA	NA	NA	NA	NA	NA	NA	140	7,390	243	15,200
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	166	8,220	196	12,300
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	158	8,070	264	17,600
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	160	15,500	1350	26,000
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	172	14,000	258	26,800
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	140	14,200	886	28,500
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	148	15,800	665	31,000
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	17,700	488	30,900
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	224	5,290	247	11,000
DUP-1	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	166	4,630	293	10,400
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	154	17,600	619	34,100
	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	13,800	484	29,600
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	286	2,820	177	4,530
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	168	14,900	414	28,000
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	315	4,600	187	1,600
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	236	7,240	361	12,000
MW-2	11/01/07	0.0123 B	0.0979	<0.00073	<0.00155	<0.0021	<0.000053	0.00403 B	<0.00125	187	200	72.4	698
	04/25/08	0.0133 B	0.0992	<0.00073	0.00186 B	<0.0021	<0.000066	0.00315 B	<0.00125	174	190	72.9	NA
	09/16/08	0.012	0.12 B	<0.002	0.0056	<0.003	<0.0002	0.006	<0.005	181	182	91.9	729
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	203	167	172	744
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	205	175	163	830
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	224	167	193	832
	06/03/10	NA	NA	NA	NA	NA	NA	NA	NA	221	181	141	818
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	226	208	138	814
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	233	162	125	823

TABLE 4

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
MW-2	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	240	194	120	2,290
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	260	229	144	1150
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	220	242	197	837
DUP	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	180	249	201	1,160
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	297	223	167	828
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	256	189	1,140
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	275	257	204	1050
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	286	256	204	1,130
	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	283	203	1030
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	334	257	116	928
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	306	138	84.8	972
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	311	270	156	1,160
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	344	239	108	942
MW-3	11/01/07	0.0185 B	0.102	<0.00073	<0.00155	<0.0021	<0.000053	0.00282 B	<0.00125	212	77	40.6	476
	04/25/08	0.0218	0.0882	<0.00073	0.00178 B	<0.0021	<0.000066	<0.00203	<0.00125	206	99.3	49.9	NA
	09/16/08	0.026	0.096 B	<0.002	<0.005	<0.003	<0.0002	<0.005	<0.005	222	63.7	31.8	457
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	229	53.6	32.2	447
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	223	65.5	35.5	488
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	231	62.7	34.8	467
	06/03/10	NA	NA	NA	NA	NA	NA	NA	NA	230	87.1	42.2	530
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	226	82.4	46.8	495
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	225	64	52.6	490
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	220	292	98.2	1,560
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	224	307	102	948
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	160	101	53.7	290
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	209	335	137	834
DUP	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	208	309	126	1,030
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	168	83.3	956
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	212	307	141	1,180
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	222	290	137	1,080
	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	282	121	853
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	240	88.6	58	523
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	224	139	86	560
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	242	128	86.3	677
MW-3	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	259	130	80.2	608

TABLE 4

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
MW-4	11/01/07	0.0203	0.117	<0.00073	<0.00205	<0.0021	<0.000053	0.00425 B	<0.00125	193	6,360	180	12,100
DUP	11/01/07	0.0176 B	0.116	<0.00073	<0.00155	<0.0021	<0.000053	0.00246B	<0.00125	193	6,170	189	12,800
	04/25/08	0.0206	0.0856	<0.00073	<0.00155	<0.0021	<0.000066	0.00316 B	<0.00125	195	5,680	163	NA
DUP	04/25/08	0.0203	0.0858	<0.00073	<0.00158	<0.0021	<0.000066	<0.00203	<0.00125	191	5,540	163	NA
	09/16/08	0.018	0.092 B	<0.002	<0.005	<0.003	<0.0002	<0.005	<0.005	196	4,420	136	8,140
DUP	09/16/08	0.019	0.088 B	<0.002	<0.005	<0.003	<0.0002	<0.005	<0.005	202	4,210	135	7,940
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	208	128	33.2	551
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	196	5,070	173	10,800
DUP	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	209	1,520	73.4	2,810
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	189	10,600	339	21,800
	06/30/10	NA	NA	NA	NA	NA	NA	NA	NA	204	3,640	124	6,530
DUP	06/30/10	NA	NA	NA	NA	NA	NA	NA	NA	202	3,310	124	6,480
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	205	3,520	121	6,480
DUP	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	207	3,520	125	6,480
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	202	3,160	122	11,500
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	280	36,900	5,970	63,200
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	228	35,600	575	51,300
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	170	39,500	3,690	90,800
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	172	33,700	<2500	68,500
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	15,600	472	28,300
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	16,500	492	27,600
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	283	7,870	284	14,600
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	173	38,200	1,320	66,900
	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	14,400	567	28,800
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	235	129	48.1	572
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	239	131	45.4	525
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	239	127	50.2	605
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	245	115	52.1	549
MW-5	09/23/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	571	102	NA
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	285	1,030	120	2,500
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	310	7,530	582	12,700
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	288	6,480	376	13,400

TABLE 4

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
		NMWQCC Human Health Standards for Groundwater[1]								NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
MW-5	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	242	7,380	545	15,900
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	286	5,200	279	10,500
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	679	89.6	1,690
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	242	7,700	410	16,200
	09/25/12	NA	NA	NA	NA	NA	NA	NA	NA	240	7,570	485	15,700
	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,890	337	8,570
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	329	319	62.1	1,010
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	286	581	72.5	4,550
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	246	6,090	319	6,110
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	236	4,240	294	7,250
DUP-1	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	238	2,030	171	4,110
MW-6	09/23/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	554	349	NA
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	198	589	310	1,710
DUP	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	193	551	302	1,720
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	212	745	284	1,840
DUP	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	236	664	262	1,940
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	232	796	296	2,270
DUP	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	220	797	299	3,290
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	160	891	372	2,530
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	215	715	334	1,920
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	394	328	1,710
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	208	838	379	2,510
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	207	825	367	2,580
	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	888	384	2,000
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	249	307	256	1,220
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	249	304	252	1,080
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	250	264	226	1,130
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	255	254	228	1,010
MW-7	09/23/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	120	70.5	NA
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	204	372	178	1,260
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	20	798	252	1,880
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	220	353	116	1,040

TABLE 4

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
MW-7	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	190	872	324	2,730
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	214	618	237	1,620
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	70.4	712
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	201	875	335	2,650
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	199	863	313	2,600
DUP-1	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	196	882	318	2,460
	12/13/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	195	86.4	779
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	218	420	166	1,220
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	215	556	214	1,180
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	222	457	181	1,480
DUP	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	219	473	187	1,680
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	250	538	207	1,210
MW-8	09/12/11	NA	NA	NA	NA	NA	NA	NA	NA	194	3,180	765	7,680
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	196	3,440	706	8,010
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,960	753	7,840
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	199	3,310	732	8,450
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	200	3,130	732	7,940
	12/13/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,360	725	6,660
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	219	2,590	755	5,860
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	224	2,280	712	4,810
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	227	2,040	674	5,600
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	235	2,110	731	4,620
MW-9	09/12/11	NA	NA	NA	NA	NA	NA	NA	NA	261	913	104	2,580
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	291	6,660	362	14,700
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	403	74.4	1,150
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	292	8,380	524	16,700
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	283	9,920	585	20,500
	12/13/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	10,000	595	17,500
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	308	385	81.3	1,170
DUP	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	306	400	88.3	1,200
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	326	393	79.6	1,040
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	329	359	64.5	1,260
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	330	2,000	153	3,720

TABLE 4

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
MW-10	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,500	149	3,810
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	319	2,580	211	5,010
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	326	2,330	177	8,760
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	329	2,550	206	5,420
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	336	2,610	244	5,020
MW-11	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,030	224	2,000
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	255	3,480	127	6,940
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	238	3,760	113	4,430
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	241	4,290	106	5,320
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	242	4,630	166	10,600
RW-1	09/13/11	NA	NA	NA	NA	NA	NA	NA	NA	156	9,820D	306	18,600
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	177	18,000	661	32,200
	03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	17,800	944	34,200
	06/11/12	NA	NA	NA	NA	NA	NA	NA	NA	245	1,430	520	3,720
	09/26/12	NA	NA	NA	NA	NA	NA	NA	NA	183	19,100	665	35,500
	12/13/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	17,300	633	29,600
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	214	10,600	573	15,200
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	203	17,000	457	27,200
DUP-1	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	201	16,100	451	32,000
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	207	13,400	391	20,200
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	202	11,500	558	21,500

Notes:

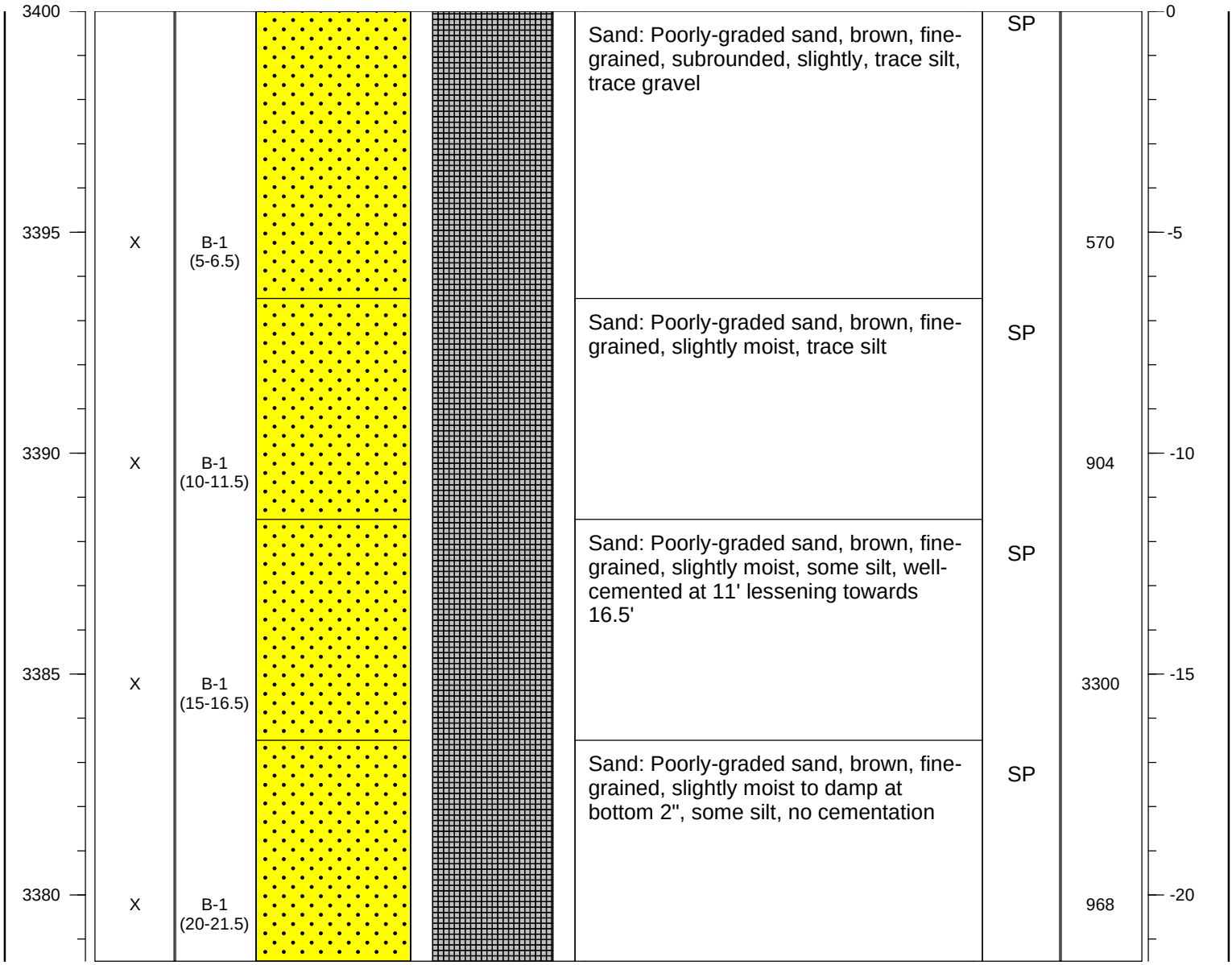
1) RCRA Metals Analysis by EPA Methods 6010B and 7470A.
2) Groundwater Quality by EPA Methods 160.1, 300.0, and 310.1.
3) Higlighted values indicate concentrations above NMWQCC Other Standards for Domestic Water Supply.
4) [1] NMWQCC Human Health Standards Per NMAC 20.6.2.3103A
5) [2] NMWQCC Other Standards for Domestic Water Supply Per NMAC 20.6.2.3103B
6) NA= Not analyzed
7) DUP = Duplicate sample

Appendix A

Soil Boring Logs

PROJECT NAME: Mark Owen #9
LOCATION: Eunice, New Mexico
FIELD LOGGED BY: Christine Mathews
SURFACE ELEVATION (msl): 3400 feet
GROUNDWATER ELEVATION (msl): N/A
REMARKS:
COORDINATES: 32.432732, -103.146485

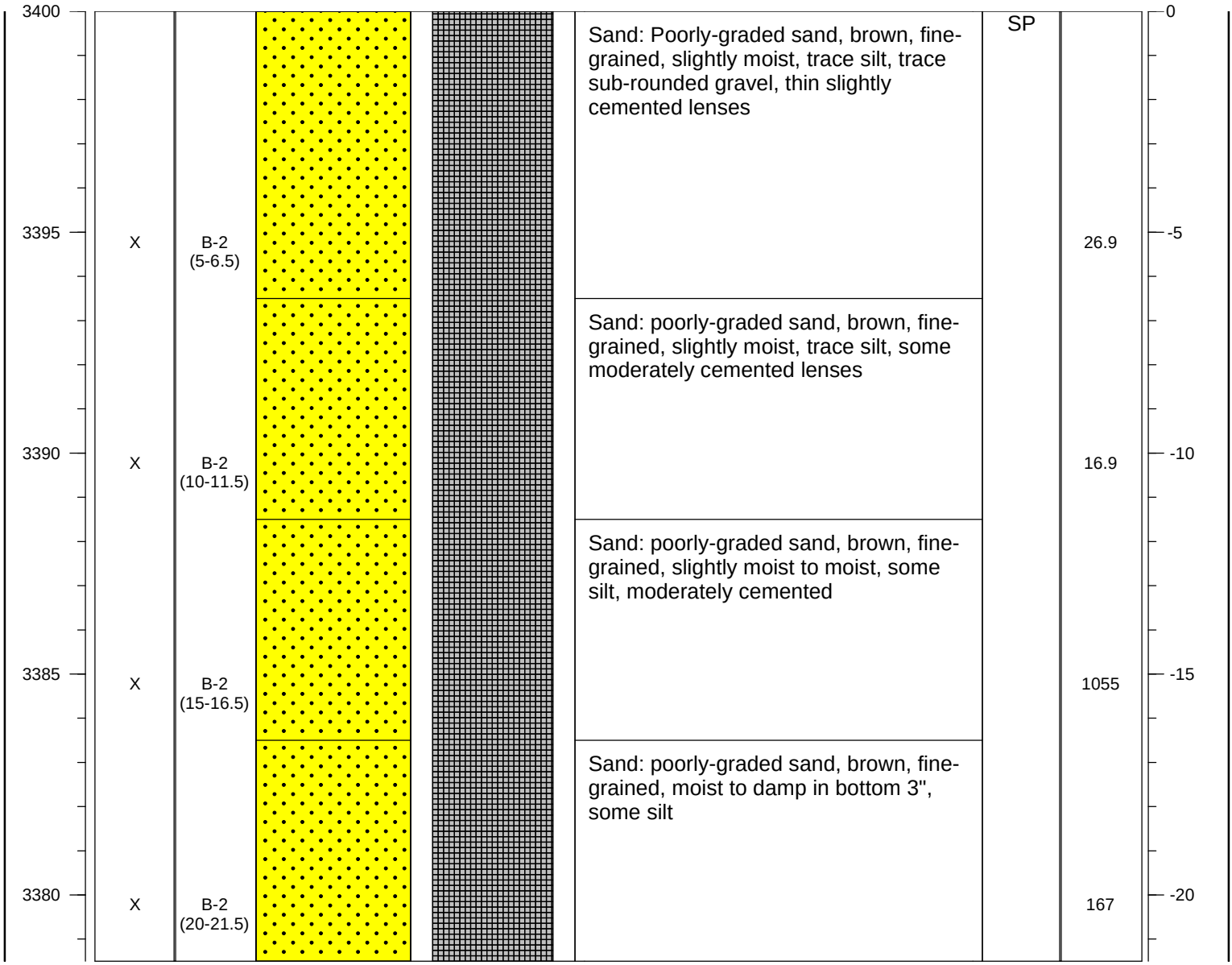
SOIL BORING NO: B-1
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4 inches
DRILLED BY: White Drilling
DATE/TIME HOLE STARTED: November 18, 2013 at 1400
DATE/TIME HOLE COMPLETED: November 18, 2013 at 1440



ELEVATION (msl) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	Chloride (mg/kg)	DEPTH (bgs) - ft
3400					Sand: Poorly-graded sand, brown, fine-grained, subrounded, slightly, trace silt, trace gravel	SP		0
3395	X	B-1 (5-6.5)					570	-5
					Sand: Poorly-graded sand, brown, fine-grained, slightly moist, trace silt	SP		
3390	X	B-1 (10-11.5)					904	-10
					Sand: Poorly-graded sand, brown, fine-grained, slightly moist, some silt, well-cemented at 11' lessening towards 16.5'	SP		
3385	X	B-1 (15-16.5)					3300	-15
					Sand: Poorly-graded sand, brown, fine-grained, slightly moist to damp at bottom 2", some silt, no cementation	SP		
3380	X	B-1 (20-21.5)					968	-20

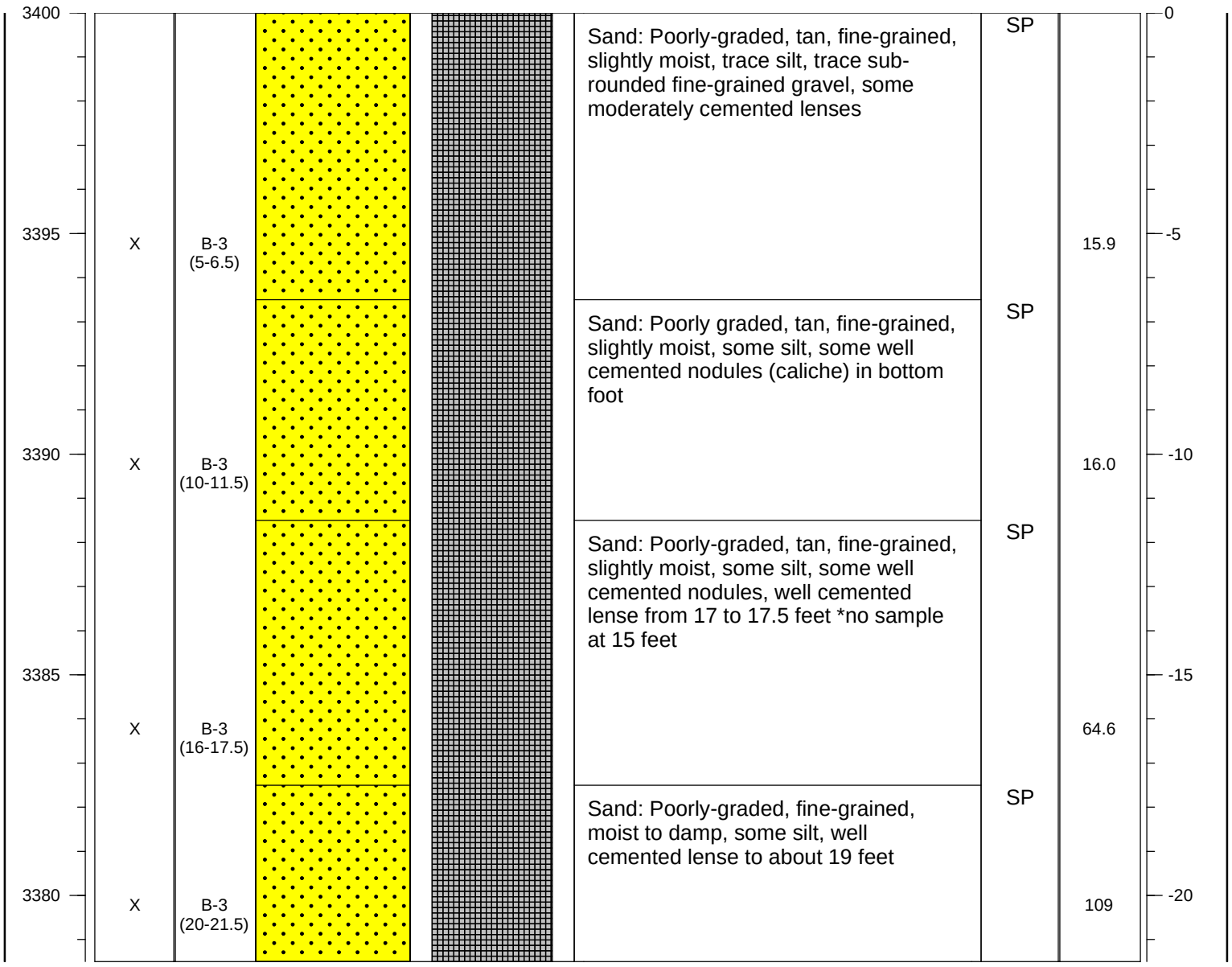
PROJECT NAME: Mark Owen #9
LOCATION: Eunice, NM
FIELD LOGGED BY: Christine Mathews
SURFACE ELEVATION (msl): 3400 feet
GROUNDWATER ELEVATION (msl): N/A
REMARKS:
COORDINATES: 32.432727, -103.146618

SOIL BORING NO: B-2
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4 inches
DRILLED BY: White Drilling
DATE/TIME HOLE STARTED: November 18, 2013 at 1450
DATE/TIME HOLE COMPLETED: November 18, 2013 at 1540



PROJECT NAME: Mark Owen #9
LOCATION: Eunice, NM
FIELD LOGGED BY: Christine Mathews
SURFACE ELEVATION (msl): 3400 feet
GROUNDWATER ELEVATION (msl): N/A
REMARKS:
COORDINATES: 32.432832, -103.146611

SOIL BORING NO: B-3
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4 inches
DRILLED BY: White Drilling
DATE/TIME HOLE STARTED: November 18, 2013 at 1545
DATE/TIME HOLE COMPLETED: November 18, 2013 at 1620



Appendix B

NMOCD Approved Plugging Plan of Operations

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

Scott Verhines, P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

November 15, 2013

Chevron
c/o Bernard Bockisch
Conestoga-Rover and Associates
6121 Indian School Road NE Suite 200
Albuquerque, NM 87110

RE: Well Plugging Plan of Operations for unidentified monitoring well Chevron Mark Owen Site, Eunice, New Mexico

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced project. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted August 31, 2005 by the State Engineer.

Sincerely,

Catherine (Cath) Goetz
Water Resource Specialist
District II Office of the State Engineer

Enclosure

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: Not permitted. Mark Owen site well TMW-3

Name of well owner: Chevron

Mailing address: P.O. Box 1949

City: Eunice State: NM Zip code: 88231

Phone number: 713-372-7705 E-mail: kegan.boyer@chevron.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: White Drilling Company, Inc.

New Mexico Well Driller License No.: WD-1456 Expiration Date: 9/30/2014

IV. WELL INFORMATION:

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

STATE ENGINEER OFFICE
POST... 2013 NOV 15 P 2:

1) GPS Well Location: Latitude: 32 deg, 25 min, 59 N sec
Longitude: 103 deg, 08 min, 49 W sec, NAD 83

2) Reason(s) for plugging well: Well initially installed as a temporary monitoring well within a reserve pit and is no longer needed

3) Was well used for any type of monitoring program? Yes If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): Groundwater from this well initially indicated a chloride concentration of 9,697 mg/L in 2006

5) Static water level: Approximately 30 (feet below land surface) / feet above land surface (circle one)

6) Depth of the well: Approximately 30 below bottom surface of reserve pit which is approximately 8 feet bgs

7) Inside diameter of innermost casing: 2 inches.

8) Casing material: PVC

9) The well was constructed with:

_____ an open-hole production interval, state the open interval: _____

X a well screen or perforated pipe, state the screened interval(s): 18 to 30 feet bgs

10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A

11) Was the well built with surface casing? No If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____

12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: Well will be grouted from total depth of well to land surface by means of a tremie pipe. Grout will be neat cement consisting of Portland Type I/II and 3 to 5% bentonite. Bentonite will be pre hydrated prior to adding Portland. Well casing will be cut off a minimum of six inches below grade and land surfaced restored to its current elevation.

2) Will well head be cut-off below land surface after plugging? Yes

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 4.8 gallons

4) Type of Cement proposed: Portland Type I/II with 3 to 5% bentonite

5) Proposed cement grout mix: 6.0 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

STATE ENGINEER OFFICE
2013 NOV 1 A 9:21

7) Grout additives requested, and percent by dry weight relative to cement: Bentonite at 3 – 5%

8) Additional notes and calculations:

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, John W. White, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant — Date: 11/14/13

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

X Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 15th day of November, 2013

Scott A. Verhines, State Engineer

By: C. Goetz
For Andy Morley
District II Supervisor

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2013 NOV 15 A 9:21

Conditions of Approval for Chevron Mark Owen Site Well Plugging Plan for TMW-3: 11/15/13

1) Per our email correspondence on 11/08/13, the Well Record indicates a bentonite and cement annular seal surrounding the subject well. Therefore, plugging the well in place will be acceptable for OSE regulations. The Well Record has been attached to the Plugging Plan for reference.

2) Plugging operations will be conducted in accordance with NMED, NMOCD, or other State or Federal agency having oversight for the above described project.

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			0 feet bgl
Bottom of proposed interval of grout placement (ft bgl)			30 feet bgl
Theoretical volume of grout required per interval (gallons)			4.8 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			6.0 gallons
Mixed on-site or batch-mixed and delivered?			On-site
Grout additive 1 requested			bentonite
Additive 1 percent by dry weight relative to cement			3 to 5 %
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

Mark Owen #9 SB-4 – MW-1

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Chevron Work Phone: _____
Contact: _____ Home Phone: _____
Address: P.O. Box 1949
City: Eunice State: NM , 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. ____1/4 ____1/4 ____1/4 Section:____ Township:____ Range:____ N.M.P.M.
in _____ County.
B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____
C. Latitude: 32 d 25 m 59 N s Longitude: 103 d 08 m 49 w
D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83
_____
E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey
F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.
G. Other: _____
H. Give State Engineer File Number if existing well: _____
I. On land owned by (required): _____

3. DRILLING CONTRACTOR

License Number: WD1478
Name: Straub Corporation Work Phone: 432-756-3489
Agent: Edward Bryan Home Phone: _____
Mailing Address: PO Box 192
City: Stanton , State: TX Zip : 79782

4. DRILLING RECORD

Drilling began: 5-3-06 ; Completed: 5-3-06 ; Type tools: Air Rotary Drilling Rig
Size of hole: 5 in.; Total depth of well: 30 ft;
Completed well is: _____ (shallow, artesian);
Depth to water upon completion of well: _____ ft.
File Number: _____ Trn Number: _____

Mark Owen #9 SB-4 – MW-1

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)

6. RECORD OF CASING

Diameter (Inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
2	sch 40 pvc	fj	30	18			.010 screen	
2	sch 40 pvc	fj	18	+3			sch 40 riser	

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud & Cement	Cubic Feet	Method of Placement
0	2	5	1 bag of cement		topload
2	30	5	3 bags of 3/8 holeplug		topload

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____
Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feet of Cement

File Number: _____ Trn Number: _____

Mark Owen #9 SB-4 – MW-1

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	tan fine sand – sandstone - caliche
5	13	8	red tan fine sand – sandstone
13	18	5	tan fine sand – sandstone
18	30	12	(hard) cal. sandstone – tan fine sand
TD	30		

Mark Owen #9 SB-4 – MW-1

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

monitor well conversion SB-4 to MW-1

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Edward Bryan — 5-3-06
Driller (mm/dd/year)

FOR STATE ENGINEER USE ONLY
Quad _____; FWL _____; FSL _____; Use _____; Location No. _____
File Number: _____ Trn Number: _____

Appendix C

Soil Laboratory Analytical Reports

Analytical Report 474457

for

Conestoga-Rovers & Associates-Albuquerque, NM

Project Manager: Bernie Bockisch

Mark Owen #9

046121

27-NOV-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

27-NOV-13

Project Manager: **Bernie Bockisch**
Conestoga-Rovers & Associates-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **474457**
Mark Owen #9
Project Address: Buckeye, NM

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 474457. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 474457 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 474457

Conestoga-Rovers & Associates-Albuquerque, NM, Albuqu

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-046121-111813-CM-B-1 (5-6.5)	S	11-18-13 14:25		474457-001
S-046121-111813-CM-B-1 (10-11.5)	S	11-18-13 14:30		474457-002
S-046121-111813-CM-B-1 (15-16.5)	S	11-18-13 14:35		474457-003
S-046121-111813-CM-B-1 (20-21.5)	S	11-18-13 14:40		474457-004
S-046121-111813-CM-DUP	S	11-18-13 14:45		474457-005
S-046121-111813-CM-B-2 (5-6.5)	S	11-18-13 15:20		474457-006
S-046121-111813-CM-B-2 (10-11.5)	S	11-18-13 15:25		474457-007
S-046121-111813-CM-B-2 (15-16.5)	S	11-18-13 15:30		474457-008
S-046121-111813-CM-B-2 (20-21.5)	S	11-18-13 15:35		474457-009
S-046121-111813-CM-B-3 (5-6.5)	S	11-18-13 16:00		474457-010
S-046121-111813-CM-B-3 (10-11.5)	S	11-18-13 16:05		474457-011
S-046121-111813-CM-B-3 (16-17.5)	S	11-18-13 16:10		474457-012
S-046121-111813-CM-B-3 (20-21.5)	S	11-18-13 16:15		474457-013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-928559 Inorganic Anions by EPA 300/300.1
E300

Batch 928559, Chloride recovered above QC limits in the Matrix Spike.
Samples affected are: 474457-002, -007, -011, -013, -008, -009, -004, -005, -006, -001, -003, -010, -012.
The Laboratory Control Sample for Chloride is within laboratory Control Limits

Certificate of Analysis Summary 474457

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Nov-19-13 03:15 pm
Report Date: 27-NOV-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	474457-001		474457-002		474457-003		474457-004		474457-005		474457-006	
	Field Id:	S-046121-111813-CM-B-1 (S		S-046121-111813-CM-B-1 (S		S-046121-111813-CM-B-1 (S		S-046121-111813-CM-B-1 (S		S-046121-111813-CM-DUP		S-046121-111813-CM-B-2 (S	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-18-13 14:25		Nov-18-13 14:30		Nov-18-13 14:35		Nov-18-13 14:40		Nov-18-13 14:45		Nov-18-13 15:20	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30	
	Analyzed:	Nov-26-13 01:48		Nov-26-13 02:11		Nov-26-13 02:34		Nov-26-13 02:56		Nov-26-13 03:19		Nov-26-13 04:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		570	20.4	904	20.5	3300	103	968	21.9	1030	21.7	26.9	10.2
Percent Moisture	***Extracted:***												
	Analyzed:	Nov-22-13 14:50		Nov-22-13 14:50		Nov-22-13 14:50		Nov-22-13 14:50		Nov-22-13 14:50		Nov-22-13 14:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		1.97	1.00	2.48	1.00	2.83	1.00	8.71	1.00	7.79	1.00	1.77	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 474457

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Nov-19-13 03:15 pm
Report Date: 27-NOV-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	474457-007		474457-008		474457-009		474457-010		474457-011		474457-012	
	Field Id:	S-046121-111813-CM-B-2 (		S-046121-111813-CM-B-2 (		S-046121-111813-CM-B-2 (		S-046121-111813-CM-B-3 (		S-046121-111813-CM-B-3 (		S-046121-111813-CM-B-3 (	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-18-13 15:25		Nov-18-13 15:30		Nov-18-13 15:35		Nov-18-13 16:00		Nov-18-13 16:05		Nov-18-13 16:10	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30		Nov-25-13 19:30	
	Analyzed:	Nov-26-13 04:27		Nov-26-13 04:49		Nov-26-13 05:12		Nov-26-13 06:20		Nov-26-13 06:43		Nov-26-13 07:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		16.9	2.06	105	2.12	167	11.1	15.9	2.12	16.0	2.07	64.6	2.06
Percent Moisture	***Extracted:***												
	Analyzed:	Nov-22-13 14:50		Nov-22-13 14:50		Nov-22-13 15:12		Nov-22-13 15:12		Nov-22-13 15:12		Nov-22-13 15:12	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.93	1.00	5.75	1.00	10.2	1.00	5.86	1.00	3.44	1.00	2.86	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 474457

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Nov-19-13 03:15 pm
Report Date: 27-NOV-13
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	474457-013					
	Field Id:	S-046121-111813-CM-B-3 (					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Nov-18-13 16:15					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-25-13 19:30					
	Analyzed:	Nov-26-13 07:28					
	Units/RL:	mg/kg	RL				
Chloride		109	11.3				
Percent Moisture	***Extracted:***						
	Analyzed:	Nov-22-13 15:12					
	Units/RL:	%	RL				
Percent Moisture		11.6	1.00				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 474457 **Project ID:** 046121

Analyst: AMB **Date Prepared:** 11/25/2013 **Date Analyzed:** 11/25/2013

Lab Batch ID: 928559 **Sample:** 647543-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	50.1	100	50.0	49.5	99	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Mark Owen #9

Work Order #: 474457

Lab Batch #: 928559 **Project ID:** 046121

Date Analyzed: 11/26/2013 **Date Prepared:** 11/25/2013 **Analyst:** AMB

QC- Sample ID: 474457-005 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1030	542	1700	124	80-120	X

Lab Batch #: 928559

Date Analyzed: 11/25/2013 **Date Prepared:** 11/25/2013 **Analyst:** AMB

QC- Sample ID: 474507-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	11.1	59.2	65.5	92	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 474457

Lab Batch #: 928341 **Project ID:** 046121

Date Analyzed: 11/22/2013 14:50 **Date Prepared:** 11/22/2013 **Analyst:** WRU

QC- Sample ID: 474358-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	6.28	6.23	1	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY RECORD

COC NO.: 32876
PAGE 1 OF 1

CONESTOGA-ROVERS & ASSOCIATES

Address: 6121 Indian School #200, Albuquerque, NM 87110
Phone: 505-884-0672 Fax:

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 046121	Laboratory Name: Xenco	Lab Location: Odessa, TX	SSOW ID: 474457
Project Name: ~~CRA 106/136~~ Mark Owen #9	Lab Contact: Kelsey Brooks	Lab Quote No:	Cooler No:
Project ~~Location~~: Buckeye, NM			Carrier:
Chemistry Contact: Chris Knight			Airbill No:
Sampler(s): Christine Mathews			Date Shipped: 11/19/13

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Sample Type: Matrix Code (see back of COC)	Sample Type: Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: Chloride	MS/MSD Request	Comments/ Special Instructions:
1	S-046121-111813-CM-B-1 (5-6.5)	11/18/13	1425		G	X								1	X		EMAIL RESULTS TO BBOCKISCH@CRAWORLD.COM AND CMATHEWS@CRAWORLD.COM
2	S-046121-111813-CM-B-1 (10-11.5)	11/18/13	1430		G	X								1	X		
3	S-046121-111813-CM-B-1 (15-16.5)	11/18/13	1435		G	X								1	X		
4	S-046121-111813-CM-B-1 (20-21.5)	11/18/13	1440		G	X								1	X		
5	S-046121-111813-CM-DUP	11/18/13	1445		G	X								1	X		
6	S-046121-111813-CM-B-2 (5-6.5)	11/18/13	1520		G	X								1	X		
7	S-046121-111813-CM-B-2 (10-11.5)	11/18/13	1525		G	X								1	X		
8	S-046121-111813-CM-B-2 (15-16.5)	11/18/13	1530		G	X								1	X		
9	S-046121-111813-CM-B-2 (20-21.5)	11/18/13	1535		G	X								1	X		
10	S-046121-111813-CM-B-3 (5-6.5)	11/18/13	1600		G	X								1	X		
11	S-046121-111813-CM-B-3 (10-11.5)	11/18/13	1605		G	X								1	X		
12	S-046121-111813-CM-B-3 (16-17.5)	11/18/13	1610		G	X								1	X		
13	S-046121-111813-CM-B-3 (20-21.5)	11/18/13	1615		G	X								1	X		
14																	
15																	

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☒ Other: Standard

Total Number of Containers: 13

All Samples in Cooler must be on COC

Notes/ Special Requirements: 8°C

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	CRA	11/19/13	1425	1.	CRA	11-19-13	1425
2.	CRA	11/19/13	1515	2.	MS	11/19/13	1515
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga-Rovers & Associates-Albuqu

Date/ Time Received: 11/19/2013 03:15:00 PM

Work Order #: 474457

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Candace James Date: 11/20/2013
Candace James

Checklist reviewed by: Kelsey Brooks Date: 11/20/2013
Kelsey Brooks

Appendix D

Title Groundwater Laboratory Analytical Reports

Analytical Report 459560

for

Conestoga Rovers & Associates

Project Manager: Brittany Ford

Mark Owen #9

046121

26-MAR-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

26-MAR-13

Project Manager: **Brittany Ford**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **459560**
Mark Owen #9
Project Address:

Brittany Ford:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 459560. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 459560 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 459560

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9	W	03-19-13 10:50		459560-001
MW-8	W	03-19-13 11:15		459560-002
MW-7	W	03-19-13 11:30		459560-003
MW-6	W	03-19-13 11:45		459560-004
MW-5	W	03-19-13 12:00		459560-005
MW-4	W	03-19-13 12:15		459560-006
MW-3	W	03-19-13 12:35		459560-007
MW-2	W	03-19-13 12:45		459560-008
MW-1	W	03-19-13 12:55		459560-009
RW-1	W	03-19-13 13:05		459560-010
MW-10	W	03-19-13 13:15		459560-011
MW-11	W	03-19-13 13:25		459560-012
DUP-1	W	03-19-13 00:00		459560-013
Trip Blank	W	03-19-13 00:00		Not Analyzed

Project ID:	*046121*	Report Date:	*26-MAR-13*
Work Order Number(s):	*459560*	Date Received:	*03/19/2013*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 459560

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Brittany Ford
Project Location:

Date Received in Lab: Tue Mar-19-13 03:35 pm
Report Date: 26-MAR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	459560-001		459560-002		459560-003		459560-004		459560-005		459560-006	
	Field Id:	MW-9		MW-8		MW-7		MW-6		MW-5		MW-4	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Mar-19-13 10:50		Mar-19-13 11:15		Mar-19-13 11:30		Mar-19-13 11:45		Mar-19-13 12:00		Mar-19-13 12:15	
Alkalinity by SM2320B SUB: E871002	*Extracted:*												
	Analyzed:	Mar-21-13 12:42		Mar-21-13 12:48		Mar-21-13 12:54		Mar-21-13 13:00		Mar-21-13 13:07		Mar-21-13 13:26	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		308	4.00	219	4.00	218	4.00	249	4.00	329	4.00	235	4.00
BTEX by EPA 8021B	*Extracted:*	Mar-22-13 13:00		Mar-22-13 13:00		Mar-22-13 13:00		Mar-22-13 13:00		Mar-22-13 13:00		Mar-22-13 13:00	
	Analyzed:	Mar-22-13 16:17		Mar-22-13 16:33		Mar-22-13 16:49		Mar-22-13 17:06		Mar-22-13 17:38		Mar-22-13 17:55	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1	*Extracted:*	Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00	
	Analyzed:	Mar-20-13 15:27		Mar-20-13 16:32		Mar-20-13 17:15		Mar-20-13 17:37		Mar-20-13 19:47		Mar-20-13 20:30	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		385	10.0	2590	50.0	420	10.0	307	10.0	319	10.0	129	5.00
Sulfate		81.3	10.0	755	50.0	166	10.0	256	10.0	62.1	10.0	48.1	5.00
TDS by SM2540C	*Extracted:*												
	Analyzed:	Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		1170	5.00	5860	5.00	1220	5.00	1220	5.00	1010	5.00	572	5.00

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 459560

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Brittany Ford
Project Location:

Date Received in Lab: Tue Mar-19-13 03:35 pm
Report Date: 26-MAR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	459560-007		459560-008		459560-009		459560-010		459560-011		459560-012	
	Field Id:	MW-3		MW-2		MW-1		RW-1		MW-10		MW-11	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Mar-19-13 12:35		Mar-19-13 12:45		Mar-19-13 12:55		Mar-19-13 13:05		Mar-19-13 13:15		Mar-19-13 13:25	
Alkalinity by SM2320B SUB: E871002	***Extracted:***												
	Analyzed:	Mar-21-13 13:32		Mar-21-13 13:39		Mar-21-13 13:45		Mar-21-13 13:51		Mar-21-13 14:04		Mar-21-13 14:11	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		240	4.00	334	4.00	286	4.00	214	4.00	319	4.00	255	4.00
BTEX by EPA 8021B	***Extracted:***	Mar-25-13 08:10		Mar-25-13 08:10		Mar-25-13 08:10		Mar-25-13 08:10		Mar-25-13 08:10		Mar-25-13 08:10	
	Analyzed:	Mar-25-13 08:55		Mar-25-13 11:58		Mar-25-13 09:27		Mar-25-13 10:03		Mar-25-13 10:20		Mar-25-13 11:09	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00		Mar-20-13 10:00	
	Analyzed:	Mar-20-13 20:52		Mar-20-13 21:14		Mar-20-13 21:36		Mar-20-13 21:57		Mar-20-13 23:50		Mar-21-13 00:12	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		88.6	5.00	257	10.0	2820	50.0	10600	200	2580	50.0	3480	50.0
Sulfate		58.0	5.00	116	10.0	177	50.0	573	200	211	50.0	127	50.0
TDS by SM2540C	***Extracted:***												
	Analyzed:	Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00		Mar-25-13 10:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		523	5.00	928	5.00	4530	5.00	15200	5.00	5010	5.00	6940	5.00

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 459560

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Brittany Ford
Project Location:

Date Received in Lab: Tue Mar-19-13 03:35 pm
Report Date: 26-MAR-13
Project Manager: Nicholas Straccione

Analysis Requested							
	Lab Id:	459560-013					
	Field Id:	DUP-1					
	Depth:						
	Matrix:	WATER					
	Sampled:	Mar-19-13 00:00					
Alkalinity by SM2320B SUB: E871002	***Extracted:***						
	Analyzed:	Mar-21-13 14:17					
	Units/RL:	mg/L	RL				
Alkalinity, Total (as CaCO3)		306	4.00				
BTEX by EPA 8021B	***Extracted:***	Mar-25-13 08:10					
	Analyzed:	Mar-25-13 10:36					
	Units/RL:	mg/L	RL				
Benzene		ND	0.00100				
Toluene		ND	0.00200				
Ethylbenzene		ND	0.00100				
m,p-Xylenes		ND	0.00200				
o-Xylene		ND	0.00100				
Total Xylenes		ND	0.00100				
Total BTEX		ND	0.00100				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-20-13 10:00					
	Analyzed:	Mar-21-13 00:55					
	Units/RL:	mg/L	RL				
Chloride		400	10.0				
Sulfate		88.3	10.0				
TDS by SM2540C	***Extracted:***						
	Analyzed:	Mar-25-13 10:00					
	Units/RL:	mg/L	RL				
Total dissolved solids		1200	5.00				

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 459560,

Project ID: 046121

Lab Batch #: 909649 **Sample:** 459560-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 16:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 909649 **Sample:** 459560-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 16:33

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 909649 **Sample:** 459560-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 16:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 909649 **Sample:** 459560-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 17:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 909649 **Sample:** 459560-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 17:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 459560,

Project ID: 046121

Lab Batch #: 909649 **Sample:** 459560-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 17:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 909774 **Sample:** 459560-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 08:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 909774 **Sample:** 459560-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 09:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 909774 **Sample:** 459560-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 10:03

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 909774 **Sample:** 459560-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 10:20

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 459560,

Project ID: 046121

Lab Batch #: 909774 **Sample:** 459560-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 10:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 909774 **Sample:** 459560-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 11:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 909774 **Sample:** 459560-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 11:58

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 909649 **Sample:** 635521-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 13:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 909774 **Sample:** 635616-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 08:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 459560, **Project ID:** 046121

Lab Batch #: 909649 **Sample:** 635521-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 13:16

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 909774 **Sample:** 635616-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 08:06

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 909649 **Sample:** 635521-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 13:33

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 909774 **Sample:** 635616-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 08:22

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 909649 **Sample:** 459386-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 14:55

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 459560, **Project ID:** 046121

Lab Batch #: 909774 **Sample:** 459560-007 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 13:21

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 909649 **Sample:** 459386-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/22/13 16:00

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 909774 **Sample:** 459560-007 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/25/13 13:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Mark Owen #9

Work Order #: 459560 **Project ID:** 046121

Lab Batch #: 909879 **Sample:** 909879-1-BKS **Matrix:** Water

Date Analyzed: 03/25/2013 **Date Prepared:** 03/25/2013 **Analyst:** AMB

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total dissolved solids	<5.00	1000	867	87	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 459560 **Project ID:** 046121

Analyst: ALA **Date Prepared:** 03/21/2013 **Date Analyzed:** 03/21/2013

Lab Batch ID: 909575 **Sample:** 909575-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	250	100	250	252	101	1	80-120	20	

Analyst: KEB **Date Prepared:** 03/22/2013 **Date Analyzed:** 03/22/2013

Lab Batch ID: 909649 **Sample:** 635521-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0895	90	0.100	0.0864	86	4	70-125	25	
Toluene	<0.00200	0.100	0.0875	88	0.100	0.0858	86	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0969	97	0.100	0.0913	91	6	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.177	89	3	70-131	25	
o-Xylene	<0.00100	0.100	0.0878	88	0.100	0.0831	83	6	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 459560 **Project ID:** 046121

Analyst: KEB **Date Prepared:** 03/25/2013 **Date Analyzed:** 03/25/2013

Lab Batch ID: 909774 **Sample:** 635616-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0957	96	0.100	0.0880	88	8	70-125	25	
Toluene	<0.00200	0.100	0.0990	99	0.100	0.0937	94	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0822	82	0.100	0.0874	87	6	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.167	84	9	70-131	25	
o-Xylene	<0.00100	0.100	0.0971	97	0.100	0.0808	81	18	71-133	25	

Analyst: AMB **Date Prepared:** 03/20/2013 **Date Analyzed:** 03/20/2013

Lab Batch ID: 909501 **Sample:** 635439-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	25.0	25.5	102	25.0	25.7	103	1	80-120	20	
Sulfate	<1.00	25.0	23.7	95	25.0	23.6	94	0	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Mark Owen #9

Work Order #: 459560

Lab Batch #: 909501 **Project ID:** 046121

Date Analyzed: 03/20/2013 **Date Prepared:** 03/20/2013 **Analyst:** AMB

QC- Sample ID: 459441-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	36.3	125	177	113	80-120	
Sulfate	66.7	125	208	113	80-120	

Lab Batch #: 909501

Date Analyzed: 03/20/2013 **Date Prepared:** 03/20/2013 **Analyst:** AMB

QC- Sample ID: 459560-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	2590	1250	3830	99	80-120	
Sulfate	755	1250	2110	108	80-120	

Lab Batch #: 909501

Date Analyzed: 03/20/2013 **Date Prepared:** 03/20/2013 **Analyst:** AMB

QC- Sample ID: 459560-005 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	319	250	583	106	80-120	
Sulfate	62.1	250	323	104	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 459560 **Project ID:** 046121

Lab Batch ID: 909649 **QC- Sample ID:** 459386-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/22/2013 **Date Prepared:** 03/22/2013 **Analyst:** KEB

Reporting Units: mg/L

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0903	90	0.100	0.0820	82	10	70-125	25	
Toluene	<0.00200	0.100	0.0918	92	0.100	0.0879	88	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0943	94	0.100	0.0858	86	9	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.174	87	0.200	0.161	81	8	70-131	25	
o-Xylene	<0.00100	0.100	0.0886	89	0.100	0.0841	84	5	71-133	25	

Lab Batch ID: 909774 **QC- Sample ID:** 459560-007 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/25/2013 **Date Prepared:** 03/25/2013 **Analyst:** KEB

Reporting Units: mg/L

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0957	96	0.100	0.0850	85	12	70-125	25	
Toluene	<0.00200	0.100	0.0924	92	0.100	0.0787	79	16	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0902	90	0.100	0.0815	82	10	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.172	86	0.200	0.154	77	11	70-131	25	
o-Xylene	<0.00100	0.100	0.0869	87	0.100	0.0778	78	11	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 459560

Lab Batch #: 909575 **Project ID:** 046121
Date Analyzed: 03/21/2013 12:35 **Date Prepared:** 03/21/2013 **Analyst:** ALA
QC- Sample ID: 459555-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	194	195	1	20	

Lab Batch #: 909575
Date Analyzed: 03/21/2013 13:57 **Date Prepared:** 03/21/2013 **Analyst:** ALA
QC- Sample ID: 459560-010 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	214	213	0	20	

Lab Batch #: 909879
Date Analyzed: 03/25/2013 10:00 **Date Prepared:** 03/25/2013 **Analyst:** AMB
QC- Sample ID: 459560-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	1170	1140	3	30	

Lab Batch #: 909879
Date Analyzed: 03/25/2013 10:00 **Date Prepared:** 03/25/2013 **Analyst:** AMB
QC- Sample ID: 459560-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	5010	4510	11	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☑ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 326985 Page 1 of 2

Company-City: CRA- MIDLAND
Phone: 4326860086
Lab Only: 459560

Project Name-Location ☐ Previously done at XENCO: MARK OWEN #9
Project ID: 046121

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM
Proj. Manager (PM): BRITTANY FORD
E-mail Results to ☐ PM and
Fax No:

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**

QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name G. PLUS, J. WILSON **Signature**

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	BTEX	TOTAL ALKALINITY	TDS 2540C	CHLORIDES & SULFATES 300	TAT ASAP 12h 24h 48h 3d (5d) 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	
1	MW-9	3/19/13	1050		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				1
2	MW-8	3/19/13	1115		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				2
3	MW-7	3/19/13	1130		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				3
4	MW-6	3/19/13	1145		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				4
5	MW-5	3/19/13	1200		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				5
6	MW-4	3/19/13	1215		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				6
7	MW-3	3/19/13	1235		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				7
8	MW-2	3/19/13	1245		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				8
9	MW-1	3/19/13	1255		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				9
10	RW-1	3/19/13	1305		W		✓	3	40.1	G,P	HCl										✓	✓	✓	✓	STD				10

Remarks

Addn: Date Rcv. by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1)	3-19-13 1535	2)	3/19/13 15:35
3)		4)	
5)		6)	

Total Containers per COC: 30 Cooler Temp: 18.0 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☑ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 326986 Page 2 of 2

Company-City: CRA - MIDLAND **Phone:** 4326860086
Project Name-Location: MARK OWEN #9 ☐ Previously done at XENCO **Project ID:** 064121
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM **Proj. Manager (PM):** BRITTANY FORD
E-mail Results to ☐ PM and **Fax No:**
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:
Quote/Pricing: **P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)
Sampler Name: J. NIXON / C. PLUS **Signature**

Lab Only: 459568

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	BTEX	TOTAL ALKALINITY	TDS 2540	CHLORIDES & SULFATED 300	TAT ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed
1	MW-10	3/19/13	1315		W		✓	3	40.1	GP	HCl										✓	✓	✓	✓	STD			
2	MW-11	3/19/13	1325		W		✓	3	40.1	GP	HCl										✓	✓	✓	✓	STD			
3	DUP-1	3/19/13			W		✓	3	40.1	GP	HCl										✓	✓	✓	✓	STD			
4	TRIP BLANK				W			2	40	C	ACI																	
5																												
6																												
7																												
8																												
9																												
10																												

Remarks
Addn: Date Rcv by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) [signature]	3-19-13 1545	2) Shawn Smith	3/19/13 15:35
3)		4)	
5)		6)	

Total Containers per COC: 9 Cooler Temp: 18.0 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**) HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 03/19/2013 03:35:00 PM

Work Order #: 459560

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	18
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 464702

for

Conestoga Rovers & Associates

Project Manager: Bernie Bockisch

Mark Owen #9

046121

14-JUN-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

14-JUN-13

Project Manager: **Bernie Bockisch**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **464702**
Mark Owen #9
Project Address: Eunice NM

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 464702. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 464702 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 464702

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9-06062013	W	06-06-13 12:45		464702-001
MW-8-06062013	W	06-06-13 13:00		464702-002
MW-7-06062013	W	06-06-13 13:15		464702-003
MW-6-06062013	W	06-06-13 13:30		464702-004
MW-5-06062013	W	06-06-13 13:45		464702-005
MW-4-06062013	W	06-06-13 14:00		464702-006
MW-3-06062013	W	06-06-13 14:15		464702-007
MW-2-06062013	W	06-06-13 14:30		464702-008
MW-1-06062013	W	06-06-13 14:45		464702-009
RW-1-06062013	W	06-06-13 15:00		464702-010
MW-10-06062013	W	06-06-13 15:30		464702-011
MW-11-06062013	W	06-06-13 15:45		464702-012
DUP-1	W	06-06-13 00:00		464702-013

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates

Project Name: Mark Owen #9

Project ID: *046121*
Work Order Number(s): *464702*

Report Date: *14-JUN-13*
Date Received: *06/07/2013*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-915843 Inorganic Anions by EPA 300/300.1
E300

Batch 915843, Sulfate recovered below QC limits in the Matrix Spike. Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 464702-002, -001.
The Laboratory Control Sample for Chloride , Sulfate is within laboratory Control Limits

Batch: LBA-915845 Inorganic Anions by EPA 300/300.1
E300

Batch 915845, Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Sulfate recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 464702-010, -007, -006, -008, -009, -005, -011, -012, -004, -013, -003.
The Laboratory Control Sample for Chloride , Sulfate is within laboratory Control Limits

Batch: LBA-915939 Inorganic Anions by EPA 300/300.1
E300

Batch 915939, Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 464702-010, -009, -013.
The Laboratory Control Sample for Chloride is within laboratory Control Limits

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates

Project Name: Mark Owen #9

Project ID: *046121*
Work Order Number(s): *464702*

Report Date: *14-JUN-13*
Date Received: *06/07/2013*

Batch: LBA-916172 BTEX by EPA 8021B
SW8021BM

Batch 916172, Toluene recovered below QC limits in the Matrix Spike.
Samples affected are: 464702-013.
The Laboratory Control Sample for Toluene is within laboratory Control Limits

Certificate of Analysis Summary 464702

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Eunice NM

Date Received in Lab: Fri Jun-07-13 04:05 pm
Report Date: 14-JUN-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	464702-001		464702-002		464702-003		464702-004		464702-005		464702-006	
	Field Id:	MW-9-06062013		MW-8-06062013		MW-7-06062013		MW-6-06062013		MW-5-06062013		MW-4-06062013	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jun-06-13 12:45		Jun-06-13 13:00		Jun-06-13 13:15		Jun-06-13 13:30		Jun-06-13 13:45		Jun-06-13 14:00	
Alkalinity by SM2320B SUB: TX104704215	*Extracted:*												
	Analyzed:	Jun-12-13 11:13		Jun-12-13 11:20		Jun-12-13 11:27		Jun-12-13 11:34		Jun-12-13 11:41		Jun-12-13 11:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		326	4.00	224	4.00	215	4.00	249	4.00	286	4.00	239	4.00
BTEX by EPA 8021B	*Extracted:*	Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00	
	Analyzed:	Jun-13-13 13:45		Jun-13-13 14:44		Jun-12-13 22:53		Jun-12-13 23:10		Jun-12-13 23:26		Jun-12-13 23:42	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	*Extracted:*	Jun-10-13 09:00		Jun-10-13 09:00		Jun-10-13 15:21		Jun-10-13 15:21		Jun-10-13 15:21		Jun-10-13 15:21	
	Analyzed:	Jun-10-13 20:20		Jun-10-13 20:38		Jun-10-13 22:10		Jun-10-13 23:06		Jun-10-13 23:24		Jun-10-13 23:42	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		393	2.00	2280	10.0	556 X	2.00	304	2.00	581	2.00	131	2.00
Sulfate		79.6	2.00	712	10.0	214 X	2.00	252	2.00	72.5	2.00	45.4	2.00
TDS by SM2540C SUB: TX104704215	*Extracted:*												
	Analyzed:	Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		1040	5.00	4810	5.00	1180	5.00	1080	5.00	4550	5.00	525	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 464702

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Eunice NM

Date Received in Lab: Fri Jun-07-13 04:05 pm
Report Date: 14-JUN-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	464702-007		464702-008		464702-009		464702-010		464702-011		464702-012	
	Field Id:	MW-3-06062013		MW-2-06062013		MW-1-06062013		RW-1-06062013		MW-10-06062013		MW-11-06062013	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jun-06-13 14:15		Jun-06-13 14:30		Jun-06-13 14:45		Jun-06-13 15:00		Jun-06-13 15:30		Jun-06-13 15:45	
Alkalinity by SM2320B SUB: TX104704215	*Extracted:*												
	Analyzed:	Jun-12-13 11:55		Jun-12-13 12:02		Jun-12-13 12:09		Jun-12-13 12:16		Jun-12-13 12:23		Jun-12-13 12:30	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		224	4.00	306	4.00	168	4.00	203	4.00	326	4.00	238	4.00
BTEX by EPA 8021B	*Extracted:*	Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00		Jun-12-13 17:00	
	Analyzed:	Jun-13-13 00:46		Jun-13-13 01:02		Jun-13-13 01:19		Jun-13-13 01:35		Jun-13-13 01:51		Jun-13-13 02:07	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		0.00146 J	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		0.00146	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		0.00146	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	*Extracted:*	Jun-10-13 15:21		Jun-10-13 15:21		Jun-10-13 15:21		Jun-10-13 15:21		Jun-10-13 15:21		Jun-10-13 15:21	
	Analyzed:	Jun-11-13 00:01		Jun-11-13 00:19		Jun-11-13 01:14		Jun-11-13 01:33		Jun-11-13 01:51		Jun-11-13 02:10	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		139	2.00	138	1.00	14900 D	100	17000 D	100	2330	10.0	3760	25.0
Sulfate		86.0	2.00	84.8	1.00	414	25.0	457	25.0	177	10.0	113	25.0
TDS by SM2540C SUB: TX104704215	*Extracted:*												
	Analyzed:	Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42		Jun-12-13 08:42	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		560	5.00	972	5.00	28000	5.00	27200	5.00	8760	5.00	4430	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 464702

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Eunice NM

Date Received in Lab: Fri Jun-07-13 04:05 pm
Report Date: 14-JUN-13
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	464702-013					
	Field Id:	DUP-1					
	Depth:						
	Matrix:	WATER					
	Sampled:	Jun-06-13 00:00					
Alkalinity by SM2320B SUB: TX104704215	***Extracted:***						
	Analyzed:	Jun-12-13 12:37					
	Units/RL:	mg/L	RL				
Alkalinity, Total (as CaCO3)		201	4.00				
BTEX by EPA 8021B	***Extracted:***	Jun-13-13 14:00					
	Analyzed:	Jun-13-13 18:56					
	Units/RL:	mg/L	RL				
Benzene		ND	0.00100				
Toluene		ND	0.00200				
Ethylbenzene		ND	0.00100				
m,p-Xylenes		ND	0.00200				
o-Xylene		ND	0.00100				
Total Xylenes		ND	0.00100				
Total BTEX		ND	0.00100				
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Jun-10-13 15:21					
	Analyzed:	Jun-11-13 02:28					
	Units/RL:	mg/L	RL				
Chloride		16100 D	100				
Sulfate		451	25.0				
TDS by SM2540C SUB: TX104704215	***Extracted:***						
	Analyzed:	Jun-12-13 08:42					
	Units/RL:	mg/L	RL				
Total dissolved solids		32000	5.00				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 464702,

Project ID: 046121

Lab Batch #: 916137 **Sample:** 464702-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 22:53

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 916137 **Sample:** 464702-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 23:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 916137 **Sample:** 464702-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 23:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 916137 **Sample:** 464702-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 23:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 916137 **Sample:** 464702-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 00:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 464702, **Project ID:** 046121

Lab Batch #: 916137 **Sample:** 464702-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 01:02

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

Lab Batch #: 916137 **Sample:** 464702-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 01:19

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 916137 **Sample:** 464702-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 01:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 916137 **Sample:** 464702-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 01:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 916137 **Sample:** 464702-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 02:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 464702, **Project ID:** 046121

Lab Batch #: 916137 **Sample:** 464702-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 13:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 916137 **Sample:** 464702-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 14:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 916172 **Sample:** 464702-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 18:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 916137 **Sample:** 639606-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 21:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 916172 **Sample:** 639656-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 18:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 464702, **Project ID:** 046121

Lab Batch #: 916137 **Sample:** 639606-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 20:12

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 916172 **Sample:** 639656-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 17:51

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 916137 **Sample:** 639606-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 20:28

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 916172 **Sample:** 639656-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 18:07

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 916137 **Sample:** 464702-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/12/13 23:58

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 464702,

Project ID: 046121

Lab Batch #: 916172 **Sample:** 464886-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 21:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 916137 **Sample:** 464702-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 00:14

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 916172 **Sample:** 464886-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/13/13 21:53

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Mark Owen #9

Work Order #: 464702 **Project ID:** 046121

Lab Batch #: 915843 **Sample:** 639419-1-BKS **Matrix:** Water
Date Analyzed: 06/10/2013 **Date Prepared:** 06/10/2013 **Analyst:** MAB
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<0.0280	250	254	102	80-120	
Sulfate	<0.0460	250	255	102	80-120	

Lab Batch #: 915845 **Sample:** 639420-1-BKS **Matrix:** Water
Date Analyzed: 06/10/2013 **Date Prepared:** 06/10/2013 **Analyst:** MAB
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<0.0280	250	260	104	80-120	
Sulfate	<0.0460	250	259	104	80-120	

Lab Batch #: 915939 **Sample:** 639471-1-BKS **Matrix:** Water
Date Analyzed: 06/11/2013 **Date Prepared:** 06/11/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<0.0280	250	251	100	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 464702 **Project ID:** 046121

Analyst: MAB **Date Prepared:** 06/12/2013 **Date Analyzed:** 06/12/2013

Lab Batch ID: 915998 **Sample:** 915998-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<0.954	250	259	104	250	261	104	1	80-120	20	

Analyst: DYV **Date Prepared:** 06/12/2013 **Date Analyzed:** 06/12/2013

Lab Batch ID: 916137 **Sample:** 639606-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000500	0.100	0.0880	88	0.100	0.0919	92	4	70-125	25	
Toluene	<0.00100	0.100	0.0832	83	0.100	0.0857	86	3	70-125	25	
Ethylbenzene	<0.000700	0.100	0.0877	88	0.100	0.0890	89	1	71-129	25	
m,p-Xylenes	<0.00140	0.200	0.177	89	0.200	0.178	89	1	70-131	25	
o-Xylene	<0.000700	0.100	0.0917	92	0.100	0.0929	93	1	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 464702 **Project ID:** 046121

Analyst: DYV **Date Prepared:** 06/13/2013 **Date Analyzed:** 06/13/2013

Lab Batch ID: 916172 **Sample:** 639656-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000500	0.100	0.0815	82	0.100	0.0801	80	2	70-125	25	
Toluene	<0.00100	0.100	0.0812	81	0.100	0.0804	80	1	70-125	25	
Ethylbenzene	<0.000700	0.100	0.0893	89	0.100	0.0884	88	1	71-129	25	
m,p-Xylenes	<0.00140	0.200	0.179	90	0.200	0.178	89	1	70-131	25	
o-Xylene	<0.000700	0.100	0.0930	93	0.100	0.0926	93	0	71-133	25	

Analyst: ANS **Date Prepared:** 06/12/2013 **Date Analyzed:** 06/12/2013

Lab Batch ID: 915937 **Sample:** 915937-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	969	97	1000	1010	101	4	80-120	30	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 464702 **Project ID:** 046121

Lab Batch ID: 916137 **QC- Sample ID:** 464702-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/12/2013 **Date Prepared:** 06/12/2013 **Analyst:** DYV

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000500	0.100	0.0856	86	0.100	0.0880	88	3	70-125	25	
Toluene	<0.00100	0.100	0.0819	82	0.100	0.0838	84	2	70-125	25	
Ethylbenzene	<0.000700	0.100	0.0868	87	0.100	0.0883	88	2	71-129	25	
m,p-Xylenes	<0.00140	0.200	0.174	87	0.200	0.177	89	2	70-131	25	
o-Xylene	<0.000700	0.100	0.0901	90	0.100	0.0914	91	1	71-133	25	

Lab Batch ID: 916172 **QC- Sample ID:** 464886-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/13/2013 **Date Prepared:** 06/13/2013 **Analyst:** DYV

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.113	0.100	0.202	89	0.100	0.203	90	0	70-125	25	
Toluene	0.0621	0.100	0.128	66	0.100	0.140	78	9	70-125	25	X
Ethylbenzene	0.00774	0.100	0.0860	78	0.100	0.0927	85	7	71-129	25	
m,p-Xylenes	0.0190	0.200	0.174	78	0.200	0.189	85	8	70-131	25	
o-Xylene	0.00695	0.100	0.0872	80	0.100	0.0952	88	9	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 464702 **Project ID:** 046121

Lab Batch ID: 915843 **QC- Sample ID:** 464423-012 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/10/2013 **Date Prepared:** 06/10/2013 **Analyst:** MAB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	272	200	368	48	200	372	50	1	80-120	20	X
Sulfate	126	200	283	79	200	285	80	1	80-120	20	X

Lab Batch ID: 915843 **QC- Sample ID:** 464423-018 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/10/2013 **Date Prepared:** 06/10/2013 **Analyst:** MAB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1870	1000	2840	97	1000	2850	98	0	80-120	20	
Sulfate	225	1000	1250	103	1000	1270	105	2	80-120	20	

Lab Batch ID: 915845 **QC- Sample ID:** 464702-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/10/2013 **Date Prepared:** 06/10/2013 **Analyst:** MAB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	556	200	530	0	200	531	0	0	80-120	20	X
Sulfate	214	200	330	58	200	331	59	0	80-120	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 464702 **Project ID:** 046121

Lab Batch ID: 915845 **QC- Sample ID:** 464702-013 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/11/2013 **Date Prepared:** 06/10/2013 **Analyst:** MAB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	14400	2500	16500	84	2500	16500	84	0	80-120	20	
Sulfate	451	2500	3010	102	2500	3020	103	0	80-120	20	

Lab Batch ID: 915939 **QC- Sample ID:** 464726-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/11/2013 **Date Prepared:** 06/11/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	246	50.0	247	2	50.0	249	6	1	80-120	20	X

Lab Batch ID: 915939 **QC- Sample ID:** 464756-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/11/2013 **Date Prepared:** 06/11/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	48.3	50.0	92.7	89	50.0	91.9	87	1	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 464702

Lab Batch #: 915998 **Project ID:** 046121
Date Analyzed: 06/12/2013 11:06 **Date Prepared:** 06/12/2013 **Analyst:** MAB
QC- Sample ID: 464632-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	323	323	0	20	

Lab Batch #: 915998
Date Analyzed: 06/12/2013 12:16 **Date Prepared:** 06/12/2013 **Analyst:** MAB
QC- Sample ID: 464702-010 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	203	203	0	20	

Lab Batch #: 915937
Date Analyzed: 06/12/2013 08:42 **Date Prepared:** 06/12/2013 **Analyst:** ANS
QC- Sample ID: 464647-001 D **Batch #:** 1 **Matrix:** Waste Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	911	987	8	30	

Lab Batch #: 915937
Date Analyzed: 06/12/2013 08:42 **Date Prepared:** 06/12/2013 **Analyst:** ANS
QC- Sample ID: 464702-010 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	27200	34900	25	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

- ☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
- ☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
- ☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
- ☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 322689 Page 1 of 2

Company-City: CRA, Midland Tx **Phone:**

Lab Only: 464702

Project Name-Location: Mark Owen #9, Eunice NM ☐ Previously done at XENCO **Project ID:** 046121

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other **Proj. Manager (PM):** Bernie Bockisch

E-mail Results to ☒ PM and Bbockisch@CRAworld.com **Fax No:**

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to: Kvining@CRAWORLD.com

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: Warren Maurer **Signature:** [signature]

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List (BTEX) MTBE EtOH Oxyg VOHs VOAs; VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:; PAHs SIM 8310 8270; TX-1005 DRO GRO MA EPH MA VPH; SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL; OC Pesticides PCBs Herbicides OP Pesticides; Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2; SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs); EDB / DBCP	Chlorides 300	Sulfates 300	TDS 2540C	Total Alkalinity 8021B
1	MW-9-06062013	6/6/2013	1245		L		X	4				X (BTEX)	X	X	X	X
2	MW-8-06062013	6/6/2013	1300		↓		↓	↓				↓	↓	↓	↓	↓
3	MW-7-06062013	↓	1315		↓		↓	↓				↓	↓	↓	↓	↓
4	MW-6-06062013	↓	1330		↓		↓	↓				↓	↓	↓	↓	↓
5	MW-5-06062013	↓	1345		↓		↓	↓				↓	↓	↓	↓	↓
6	MW-4-06062013	↓	1400		↓		↓	↓				↓	↓	↓	↓	↓
7	MW-3-06062013	↓	1415		↓		↓	↓				↓	↓	↓	↓	↓
8	MW-2-06062013	↓	1430		↓		↓	↓				↓	↓	↓	↓	↓
9	MW-1-06062013	↓	1445		↓		↓	↓				↓	↓	↓	↓	↓
10	RW-1-06062013	↓	1500		↓		↓	↓				↓	↓	↓	↓	↓

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d
Addn: PAH above mg/L W, mg/Kg S Highest Hit
Hold Samples (Surcharges will apply and are pre-approved)
Sample Clean-ups are pre-approved as needed

Remarks

Addn: Date Rcv. by: From:

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) [signature]	6/7/13 16:05	2) [signature]	6-7-13 16:05
2	3)		4)	
3	5)		6)	

Total Containers per COC: 40 Cooler Temp: 1.0 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**), See Label (**L**), Other (**O**)

Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other

Cont. Type: Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 322692 Page 2 of 2

Company-City: CRA, Midland TX **Phone**

Lab Only:

Project Name-Location: Mark Owen #9, Eunice NM ☐ Previously done at XENCO **Project ID:** 046121

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other **Proj. Manager (PM):** Bernie Bockisch

E-mail Results to ☒ PM and Bbockisch@CRAworld.com **Fax No:**

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.

Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: Warren Maurer **Signature:** [signature]

Analysis columns: VOA: Full-List (BTEX) MTBE EtOH Oxyg VOHs VOAs; VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:; PAHs SIM 8310 8270; TX-1005 DRO GRO MA EPH MA VPH; SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL; OC Pesticides PCBs Herbicides OP Pesticides; Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2; SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs); EDB / DBCP; Chlorides 300; Sulfates 300; TDS 2540C; Total Alkalinity 8021B; TATASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d; Addn: PAH above mg/L W, mg/Kg S Highest Hit; Hold Samples (Surcharges will apply and are pre-approved); Sample Clean-ups are pre-approved as needed

#	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: BTEX	Chlorides 300	Sulfates 300	TDS 2540C	Total Alkalinity 8021B	#
1	MW-10-06062013	6/6/2013	1530		L		X	4				X	X	X	X	X	1
2	MW-11-06062013	6/6/2013	1545		↓		↓	↓				↓	↓	↓	↓	↓	2
3	Dup 1				↓		↓	↓				↓	↓	↓	↓	↓	3
4																	4
5																	5
6																	6
7																	7
8																	8
9																	9
10																	10

Remarks

Addn: Date Rcv. by: From:

#	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) [signature]	6/7/13 16:05	2) [signature]	6-7-13 16:05
2	3)		4)	
3	5)		6)	

Total Containers per COC: 12 Cooler Temp: 1.0 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**)
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other ______ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 06/07/2013 04:05:00 PM

Work Order #: 464702

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 06/07/2013

Checklist reviewed by: Kelsey Brooks Date: 06/07/2013

Analytical Report 470218

for

Conestoga-Rovers & Associates-Albuquerque, NM

Project Manager: Bernie Bockisch

Mark Owen #9 Reserve Pit

046121-2013-01

26-SEP-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

26-SEP-13

Project Manager: **Bernie Bockisch**
Conestoga-Rovers & Associates-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **470218**
Mark Owen #9 Reserve Pit
Project Address: Eunice, New Mexico

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 470218. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 470218 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 470218

Conestoga-Rovers & Associates-Albuquerque, NM, Albuqu

Mark Owen #9 Reserve Pit

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9-091213	W	09-12-13 11:40		470218-001
MW-8-091213	W	09-12-13 11:55		470218-002
MW-7-091213	W	09-12-13 12:10		470218-003
MW-6-091213	W	09-12-13 12:20		470218-004
MW-5-091213	W	09-12-13 12:30		470218-005
MW-4-091213	W	09-12-13 12:40		470218-006
MW-3-091213	W	09-12-13 12:55		470218-007
MW-2-091213	W	09-12-13 13:10		470218-008
MW-1-091213	W	09-12-13 13:30		470218-009
RW-1-091213	W	09-12-13 13:40		470218-010
MW-10-091213	W	09-12-13 13:50		470218-011
MW-11-091213	W	09-12-13 14:00		470218-012
DUP-091213	W	09-12-13 00:00		470218-013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-922959 BTEX by SW 8260B
SW8260BTX

Batch 922959, Benzene recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 470218-011, -001, -003, -005, -008, -007, -013, -004, -006, -009, -010, -002.
The Laboratory Control Sample for Benzene is within laboratory Control Limits

Certificate of Analysis Summary 470218

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Mark Owen #9 Reserve Pit

Project Id: 046121-2013-01
Contact: Bernie Bockisch
Project Location: Eunice, New Mexico

Date Received in Lab: Thu Sep-12-13 04:45 pm
Report Date: 26-SEP-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	470218-001		470218-002		470218-003		470218-004		470218-005		470218-006	
	Field Id:	MW-9-091213		MW-8-091213		MW-7-091213		MW-6-091213		MW-5-091213		MW-4-091213	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Sep-12-13 11:40		Sep-12-13 11:55		Sep-12-13 12:10		Sep-12-13 12:20		Sep-12-13 12:30		Sep-12-13 12:40	
Alkalinity by SM2320B SUB: TX104704215	***Extracted:***												
	Analyzed:	Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		329	4.00	227	4.00	222	4.00	250	4.00	246	4.00	239	4.00
BTEX by SW 8260B SUB: TX104704215	***Extracted:***	Sep-18-13 13:00		Sep-18-13 13:02		Sep-18-13 13:04		Sep-18-13 13:06		Sep-18-13 13:08		Sep-18-13 13:10	
	Analyzed:	Sep-18-13 13:57		Sep-18-13 14:23		Sep-18-13 14:49		Sep-18-13 15:14		Sep-18-13 15:39		Sep-18-13 16:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19	
	Analyzed:	Sep-22-13 01:32		Sep-22-13 02:28		Sep-22-13 02:47		Sep-22-13 03:05		Sep-22-13 03:24		Sep-22-13 03:43	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		359	10.0	2040	10.0	457	10.0	264	1.00	6090	100	127	1.00
Sulfate		64.5	10.0	674	10.0	181	10.0	226	1.00	319	100	50.2	1.00
TDS by SM2540C SUB: TX104704215	***Extracted:***												
	Analyzed:	Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		1260	5.00	5600	5.00	1480	5.00	1130	5.00	6110	5.00	605	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 470218

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Mark Owen #9 Reserve Pit

Project Id: 046121-2013-01
Contact: Bernie Bockisch
Project Location: Eunice, New Mexico

Date Received in Lab: Thu Sep-12-13 04:45 pm
Report Date: 26-SEP-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	470218-007		470218-008		470218-009		470218-010		470218-011		470218-012	
	Field Id:	MW-3-091213		MW-2-091213		MW-1-091213		RW-1-091213		MW-10-091213		MW-11-091213	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Sep-12-13 12:55		Sep-12-13 13:10		Sep-12-13 13:30		Sep-12-13 13:40		Sep-12-13 13:50		Sep-12-13 14:00	
Alkalinity by SM2320B SUB: TX104704215	***Extracted:***												
	Analyzed:	Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48		Sep-23-13 15:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		242	4.00	311	4.00	315	4.00	207	4.00	329	4.00	241	4.00
BTEX by SW 8260B SUB: TX104704215	***Extracted:***	Sep-18-13 16:16		Sep-18-13 16:18		Sep-18-13 16:20		Sep-18-13 16:22		Sep-18-13 16:24		Sep-19-13 12:30	
	Analyzed:	Sep-18-13 16:32		Sep-18-13 16:57		Sep-18-13 17:22		Sep-18-13 17:48		Sep-18-13 18:13		Sep-19-13 13:10	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19		Sep-21-13 16:19	
	Analyzed:	Sep-22-13 04:38		Sep-22-13 04:57		Sep-22-13 05:16		Sep-22-13 05:34		Sep-22-13 05:53		Sep-22-13 06:49	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		128	1.00	270	1.00	4600	100	13400	100	2550	10.0	4290	100
Sulfate		86.3	1.00	156	1.00	187	100	391	100	206	10.0	106	100
TDS by SM2540C SUB: TX104704215	***Extracted:***												
	Analyzed:	Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00		Sep-18-13 10:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		677	5.00	1160	5.00	1600	5.00	20200	5.00	5420	5.00	5320	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 470218

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Mark Owen #9 Reserve Pit

Project Id: 046121-2013-01
Contact: Bernie Bockisch
Project Location: Eunice, New Mexico

Date Received in Lab: Thu Sep-12-13 04:45 pm
Report Date: 26-SEP-13
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	470218-013						
	Field Id:	DUP-091213						
	Depth:							
	Matrix:	WATER						
	Sampled:	Sep-12-13 00:00						
Alkalinity by SM2320B SUB: TX104704215	***Extracted:***							
	Analyzed:	Sep-23-13 15:48						
	Units/RL:	mg/L	RL					
Alkalinity, Total (as CaCO3)		219	4.00					
BTEX by SW 8260B SUB: TX104704215	***Extracted:***	Sep-18-13 16:28						
	Analyzed:	Sep-18-13 19:03						
	Units/RL:	mg/L	RL					
Benzene		ND	0.00100					
Toluene		ND	0.00100					
Ethylbenzene		ND	0.00100					
m,p-Xylenes		ND	0.00200					
o-Xylene		ND	0.00100					
Total Xylenes		ND	0.00100					
Total BTEX		ND	0.00100					
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Sep-21-13 16:19						
	Analyzed:	Sep-22-13 07:07						
	Units/RL:	mg/L	RL					
Chloride		473	10.0					
Sulfate		187	10.0					
TDS by SM2540C SUB: TX104704215	***Extracted:***							
	Analyzed:	Sep-18-13 10:00						
	Units/RL:	mg/L	RL					
Total dissolved solids		1680	5.00					

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Orders : 470218,

Project ID: 046121-2013-01

Lab Batch #: 922959 **Sample:** 470218-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 13:57

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0510	0.0500	102	63-144	
Toluene-D8	0.0531	0.0500	106	80-117	
4-Bromofluorobenzene	0.0537	0.0500	107	74-124	

Lab Batch #: 922959 **Sample:** 470218-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 14:23

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0548	0.0500	110	75-131	
1,2-Dichloroethane-D4	0.0545	0.0500	109	63-144	
Toluene-D8	0.0512	0.0500	102	80-117	
4-Bromofluorobenzene	0.0537	0.0500	107	74-124	

Lab Batch #: 922959 **Sample:** 470218-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 14:49

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0532	0.0500	106	63-144	
Toluene-D8	0.0527	0.0500	105	80-117	
4-Bromofluorobenzene	0.0514	0.0500	103	74-124	

Lab Batch #: 922959 **Sample:** 470218-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 15:14

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0523	0.0500	105	75-131	
1,2-Dichloroethane-D4	0.0548	0.0500	110	63-144	
Toluene-D8	0.0526	0.0500	105	80-117	
4-Bromofluorobenzene	0.0571	0.0500	114	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Orders : 470218,

Project ID: 046121-2013-01

Lab Batch #: 922959 **Sample:** 470218-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 15:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0550	0.0500	110	75-131	
1,2-Dichloroethane-D4	0.0588	0.0500	118	63-144	
Toluene-D8	0.0488	0.0500	98	80-117	
4-Bromofluorobenzene	0.0511	0.0500	102	74-124	

Lab Batch #: 922959 **Sample:** 470218-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 16:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0500	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0534	0.0500	107	63-144	
Toluene-D8	0.0508	0.0500	102	80-117	
4-Bromofluorobenzene	0.0572	0.0500	114	74-124	

Lab Batch #: 922959 **Sample:** 470218-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 16:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0529	0.0500	106	75-131	
1,2-Dichloroethane-D4	0.0583	0.0500	117	63-144	
Toluene-D8	0.0572	0.0500	114	80-117	
4-Bromofluorobenzene	0.0523	0.0500	105	74-124	

Lab Batch #: 922959 **Sample:** 470218-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 16:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0530	0.0500	106	63-144	
Toluene-D8	0.0498	0.0500	100	80-117	
4-Bromofluorobenzene	0.0549	0.0500	110	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Orders : 470218,

Project ID: 046121-2013-01

Lab Batch #: 922959 **Sample:** 470218-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 17:22

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0558	0.0500	112	75-131	
1,2-Dichloroethane-D4	0.0537	0.0500	107	63-144	
Toluene-D8	0.0471	0.0500	94	80-117	
4-Bromofluorobenzene	0.0530	0.0500	106	74-124	

Lab Batch #: 922959 **Sample:** 470218-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 17:48

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0535	0.0500	107	75-131	
1,2-Dichloroethane-D4	0.0528	0.0500	106	63-144	
Toluene-D8	0.0515	0.0500	103	80-117	
4-Bromofluorobenzene	0.0528	0.0500	106	74-124	

Lab Batch #: 922959 **Sample:** 470218-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 18:13

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0520	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0578	0.0500	116	63-144	
Toluene-D8	0.0553	0.0500	111	80-117	
4-Bromofluorobenzene	0.0554	0.0500	111	74-124	

Lab Batch #: 922959 **Sample:** 470218-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 19:03

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0557	0.0500	111	63-144	
Toluene-D8	0.0507	0.0500	101	80-117	
4-Bromofluorobenzene	0.0504	0.0500	101	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Orders : 470218,

Project ID: 046121-2013-01

Lab Batch #: 923141 **Sample:** 470218-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/13 13:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0506	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0525	0.0500	105	63-144	
Toluene-D8	0.0493	0.0500	99	80-117	
4-Bromofluorobenzene	0.0514	0.0500	103	74-124	

Lab Batch #: 922959 **Sample:** 643996-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 11:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0533	0.0500	107	75-131	
1,2-Dichloroethane-D4	0.0563	0.0500	113	63-144	
Toluene-D8	0.0520	0.0500	104	80-117	
4-Bromofluorobenzene	0.0549	0.0500	110	74-124	

Lab Batch #: 923141 **Sample:** 644094-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/13 11:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0518	0.0500	104	63-144	
Toluene-D8	0.0507	0.0500	101	80-117	
4-Bromofluorobenzene	0.0523	0.0500	105	74-124	

Lab Batch #: 922959 **Sample:** 643996-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 10:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0508	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0494	0.0500	99	63-144	
Toluene-D8	0.0518	0.0500	104	80-117	
4-Bromofluorobenzene	0.0553	0.0500	111	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Orders : 470218,

Project ID: 046121-2013-01

Lab Batch #: 923141 **Sample:** 644094-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/13 11:03

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
Dibromofluoromethane	0.0493	0.0500	99	75-131	
1,2-Dichloroethane-D4	0.0490	0.0500	98	63-144	
Toluene-D8	0.0495	0.0500	99	80-117	
4-Bromofluorobenzene	0.0504	0.0500	101	74-124	

Lab Batch #: 922959 **Sample:** 470222-020 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 12:15

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
Dibromofluoromethane	0.0513	0.0500	103	75-131	
1,2-Dichloroethane-D4	0.0539	0.0500	108	63-144	
Toluene-D8	0.0512	0.0500	102	80-117	
4-Bromofluorobenzene	0.0540	0.0500	108	74-124	

Lab Batch #: 923141 **Sample:** 470218-012 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/13 15:26

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
Dibromofluoromethane	0.0528	0.0500	106	75-131	
1,2-Dichloroethane-D4	0.0532	0.0500	106	63-144	
Toluene-D8	0.0489	0.0500	98	80-117	
4-Bromofluorobenzene	0.0523	0.0500	105	74-124	

Lab Batch #: 922959 **Sample:** 470222-020 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/18/13 12:40

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	SURROGATE RECOVERY STUDY				
Dibromofluoromethane	0.0513	0.0500	103	75-131	
1,2-Dichloroethane-D4	0.0537	0.0500	107	63-144	
Toluene-D8	0.0540	0.0500	108	80-117	
4-Bromofluorobenzene	0.0527	0.0500	105	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Orders : 470218,

Project ID: 046121-2013-01

Lab Batch #: 923141 **Sample:** 470218-012 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/13 15:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0528	0.0500	106	63-144	
Toluene-D8	0.0521	0.0500	104	80-117	
4-Bromofluorobenzene	0.0512	0.0500	102	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Mark Owen #9 Reserve Pit

Work Order #: 470218 **Project ID:** 046121-2013-01

Lab Batch #: 922959 **Sample:** 643996-1-BKS **Matrix:** Water
Date Analyzed: 09/18/2013 **Date Prepared:** 09/18/2013 **Analyst:** SAD
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.00100	0.100	0.0914	91	66-142	
Toluene	<0.00100	0.100	0.0983	98	59-139	
Ethylbenzene	<0.00100	0.100	0.101	101	75-125	
m,p-Xylenes	<0.00200	0.200	0.186	93	75-125	
o-Xylene	<0.00100	0.100	0.0902	90	75-125	

Lab Batch #: 923141 **Sample:** 644094-1-BKS **Matrix:** Water
Date Analyzed: 09/19/2013 **Date Prepared:** 09/19/2013 **Analyst:** SAD
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.00100	0.100	0.101	101	66-142	
Toluene	<0.00100	0.100	0.0997	100	59-139	
Ethylbenzene	<0.00100	0.100	0.109	109	75-125	
m,p-Xylenes	<0.00200	0.200	0.220	110	75-125	
o-Xylene	<0.00100	0.100	0.105	105	75-125	

Lab Batch #: 923365 **Sample:** 644166-1-BKS **Matrix:** Water
Date Analyzed: 09/22/2013 **Date Prepared:** 09/21/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<1.00	100	97.3	97	90-110	
Sulfate	<1.00	100	97.5	98	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Blank Spike Recovery

Project Name: Mark Owen #9 Reserve Pit

Work Order #: 470218 **Project ID:** 046121-2013-01

Lab Batch #: 923705 **Sample:** 923705-1-BKS **Matrix:** Water

Date Analyzed: 09/18/2013 **Date Prepared:** 09/18/2013 **Analyst:** AMB

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total dissolved solids	<5.00	1000	992	99	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Order #: 470218 **Project ID:** 046121-2013-01

Analyst: DHE **Date Prepared:** 09/23/2013 **Date Analyzed:** 09/23/2013

Lab Batch ID: 923311 **Sample:** 923311-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	250	100	250	249	100	0	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Order # : 470218 **Project ID:** 046121-2013-01

Lab Batch ID: 922959 **QC- Sample ID:** 470222-020 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/18/2013 **Date Prepared:** 09/18/2013 **Analyst:** SAD

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	2.22	1.00	4.03	181	1.00	4.03	181	0	66-142	20	X
Toluene	0.221	1.00	1.41	119	1.00	1.39	117	1	59-139	20	
Ethylbenzene	0.0116	1.00	1.04	103	1.00	1.10	109	6	75-125	20	
m,p-Xylenes	0.368	2.00	2.69	116	2.00	2.65	114	1	75-125	20	
o-Xylene	0.295	1.00	1.49	120	1.00	1.38	109	8	75-125	20	

Lab Batch ID: 923141 **QC- Sample ID:** 470218-012 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/19/2013 **Date Prepared:** 09/19/2013 **Analyst:** SAD

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.101	101	0.100	0.106	106	5	66-142	20	
Toluene	<0.00100	0.100	0.101	101	0.100	0.108	108	7	59-139	20	
Ethylbenzene	<0.00100	0.100	0.111	111	0.100	0.116	116	4	75-125	20	
m,p-Xylenes	<0.00200	0.200	0.220	110	0.200	0.226	113	3	75-125	20	
o-Xylene	<0.00100	0.100	0.107	107	0.100	0.111	111	4	75-125	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9 Reserve Pit

Work Order # : 470218 **Project ID:** 046121-2013-01

Lab Batch ID: 923365 **QC- Sample ID:** 470218-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/22/2013 **Date Prepared:** 09/21/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	359	1000	1350	99	1000	1370	101	1	80-120	20	
Sulfate	64.5	1000	1060	100	1000	1070	101	1	80-120	20	

Lab Batch ID: 923365 **QC- Sample ID:** 470218-011 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/22/2013 **Date Prepared:** 09/21/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2550	1000	3520	97	1000	3500	95	1	80-120	20	
Sulfate	206	1000	1210	100	1000	1200	99	1	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Mark Owen #9 Reserve Pit

Work Order #: 470218

Lab Batch #: 923311 **Project ID:** 046121-2013-01
Date Analyzed: 09/23/2013 15:48 **Date Prepared:** 09/23/2013 **Analyst:** DHE
QC- Sample ID: 470218-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	329	329	0	20	

Lab Batch #: 923311
Date Analyzed: 09/23/2013 15:48 **Date Prepared:** 09/23/2013 **Analyst:** DHE
QC- Sample ID: 470218-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	329	329	0	20	

Lab Batch #: 923705
Date Analyzed: 09/18/2013 10:00 **Date Prepared:** 09/18/2013 **Analyst:** AMB
QC- Sample ID: 470218-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	1260	1320	5	30	

Lab Batch #: 923705
Date Analyzed: 09/18/2013 10:00 **Date Prepared:** 09/18/2013 **Analyst:** AMB
QC- Sample ID: 470218-010 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	20200	25200	22	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

CHAIN OF CUSTODY RECORD

CONESTOGA-ROVERS & ASSOCIATES

Bernie Bocksch 470218

COC NO.: 33249

PAGE 1 OF 1

(See Reverse Side for Instructions)

Address: 5121 Indian School Road, NE Suite 200 Albuquerque, NM 87110

Phone: 505-884-0672 Fax: BBocksch@CRAworld.com

cell 505-280-0577 505-884-4932

Project No/ Phase/Task Code: 046121-2013-01	**Laboratory Name:** Xenco	**Lab Location:**	**SSOW ID:**
Project Name: Mark Owen #9 Reserve Pit	**Lab Contact:**	**Lab Quote No:**	**Cooler No:**
Project Location: Eunice, New Mexico			**Carrier:**
Chemistry Contact:			**Airbill No:**
Sampler(s): Joe Mireles Warren Mayben			**Date Shipped:**

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Sample Type: Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO_3)	Sulfuric Acid (H_2SO_4)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other: ICE	Total Containers/Sample	BTEX 8021B	Total Alkalinity SM	TDS 2540C	Chlorides SM4500	MS/MSD Request	Comments/ Special Instructions:
1	MW-9-091213	09/12/13	1140	WG	G		X						X	3	X	X	X	X		
2	MW-8-091213	09/12/13	1155	WG	G		X						X	3	X	X	X	X		
3	MW-7-091213	09/12/13	1210	WG	G		X						X	3	X	X	X	X		
4	MW-6-091213	09/12/13	1220	WG	G		X						X	3	X	X	X	X		
5	MW-5-091213	09/12/13	1230	WG	G		X						X	3	X	X	X	X		
6	MW-4-091213	09/12/13	1240	WG	G		X						X	3	X	X	X	X		
7	MW-3-091213	09/12/13	1255	WG	G		X						X	3	X	X	X	X		
8	MW-2-091213	09/12/13	1310	WG	G		X						X	3	X	X	X	X		
9	MW-1-091213	09/12/13	1330	WG	G		X						X	3	X	X	X	X		
10	DW-1-091213	09/12/13	1340	WG	G		X						X	3	X	X	X	X		
11	MW-10-091213	09/12/13	1350	WG	G		X						X	3	X	X	X	X		
12	MW-11-091213	09/12/13	1400	WG	G		X						X	3	X	X	X	X		
13	DUP-091213	9/12/13	-	WG	G		X						X	3 4	X	X	X	X		
14																				
15																				

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☒ Other: STD

Total Number of Containers:

All Samples in Cooler must be on COC

Notes/ Special Requirements: 4°

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	CRA	9-12-13	1645	1.	Xenco	9-12-13	1645
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga-Rovers & Associates-Albuqu

Date/ Time Received: 09/12/2013 04:45:00 PM

Work Order #: 470218

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Candace James Date: 09/12/2013
Candace James

Checklist reviewed by: Kelsey Brooks Date: 09/12/2013
Kelsey Brooks

Analytical Report 474413

for

Conestoga Rovers & Associates

Project Manager: Bernie Bockisch

Mark Owen #9

046121

03-DEC-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

03-DEC-13

Project Manager: **Bernie Bockisch**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **474413**
Mark Owen #9
Project Address: Eunice, NM

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 474413. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 474413 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 474413

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9-111913	W	11-19-13 15:30		474413-001
MW-8-111913	W	11-19-13 15:40		474413-002
MW-7-111913	W	11-19-13 15:50		474413-003
MW-6-111913	W	11-19-13 16:00		474413-004
MW-5-111913	W	11-19-13 16:10		474413-005
MW-4-111913	W	11-19-13 16:20		474413-006
MW-3-111913	W	11-19-13 16:30		474413-007
MW-2-111913	W	11-19-13 16:40		474413-008
MW-1-111913	W	11-19-13 16:50		474413-009
RW-1-111913	W	11-19-13 17:00		474413-010
MW-10-111913	W	11-19-13 17:10		474413-011
MW-11-111913	W	11-19-13 17:20		474413-012
DUP-1-111913	W	11-19-13 00:00		474413-013
Trip Blank	W	11-18-13 11:00		474413-014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-928282 Inorganic Anions by EPA 300/300.1
E300

Batch 928282, Chloride recovered above QC limits
Samples affected are: 474413-004, -011, -003, -005, -012, -006, -007, -008, -009, -001, -010, -002, -013.
The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-928602 BTEX by EPA 8021B
SW8021BM

Batch 928602, m,p-Xylenes RPD was outside laboratory control limits.
Samples affected are: 474413-009, -010

SW8021BM

Batch 928602, Ethylbenzene recovered below QC limits in the laboratory control sample.
Samples affected are: 474413-009, -010.

Certificate of Analysis Summary 474413

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Eunice, NM

Date Received in Lab: Wed Nov-20-13 10:07 am
Report Date: 03-DEC-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	474413-001		474413-002		474413-003		474413-004		474413-005		474413-006	
	Field Id:	MW-9-111913		MW-8-111913		MW-7-111913		MW-6-111913		MW-5-111913		MW-4-111913	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-19-13 15:30		Nov-19-13 15:40		Nov-19-13 15:50		Nov-19-13 16:00		Nov-19-13 16:10		Nov-19-13 16:20	
Alkalinity by SM2320B SUB: E871002	***Extracted:***												
	Analyzed:	Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		330	4.00	235	4.00	250	4.00	255	4.00	236	4.00	245	4.00
BTEX by EPA 8021B	***Extracted:***	Nov-22-13 12:00		Nov-22-13 12:00		Nov-22-13 12:00		Nov-22-13 12:00		Nov-22-13 12:00		Nov-22-13 12:00	
	Analyzed:	Nov-22-13 17:41		Nov-22-13 17:58		Nov-22-13 18:14		Nov-22-13 18:31		Nov-22-13 18:47		Nov-22-13 19:03	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0241	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		0.0241	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-21-13 16:16		Nov-21-13 16:39		Nov-21-13 17:01		Nov-21-13 17:24		Nov-21-13 18:32		Nov-21-13 18:54	
	Analyzed:	Nov-21-13 16:16		Nov-21-13 16:39		Nov-21-13 17:01		Nov-21-13 17:24		Nov-21-13 18:32		Nov-21-13 18:54	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		2000	20.0	2110	50.0	538	10.0	254	10.0	4240	50.0	115	5.00
Sulfate		153	40.0	731	100	207	20.0	228	20.0	294	100	52.1	10.0
TDS by SM2540C SUB: E871002	***Extracted:***												
	Analyzed:	Nov-23-13 14:27		Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		3720	5.00	4620	5.00	1210	5.00	1010	5.00	7250	5.00	549	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 474413

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Eunice, NM

Date Received in Lab: Wed Nov-20-13 10:07 am
Report Date: 03-DEC-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	474413-007		474413-008		474413-009		474413-010		474413-011		474413-012	
	Field Id:	MW-3-111913		MW-2-111913		MW-1-111913		RW-1-111913		MW-10-111913		MW-11-111913	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-19-13 16:30		Nov-19-13 16:40		Nov-19-13 16:50		Nov-19-13 17:00		Nov-19-13 17:10		Nov-19-13 17:20	
Alkalinity by SM2320B SUB: E871002	***Extracted:***												
	Analyzed:	Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46		Nov-25-13 10:46	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		259	4.00	344	4.00	236	4.00	202	4.00	336	4.00	242	4.00
BTEX by EPA 8021B	***Extracted:***	Nov-22-13 12:00		Nov-22-13 12:00		Nov-22-13 16:00		Nov-22-13 16:00		Nov-22-13 12:00		Nov-22-13 12:00	
	Analyzed:	Nov-22-13 19:20		Nov-22-13 19:36		Nov-23-13 01:01		Nov-23-13 01:17		Nov-22-13 20:25		Nov-22-13 20:41	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-21-13 19:17		Nov-21-13 19:40		Nov-21-13 20:02		Nov-21-13 20:48		Nov-21-13 21:10		Nov-21-13 21:33	
	Analyzed:	Nov-21-13 19:17		Nov-21-13 19:40		Nov-21-13 20:02		Nov-21-13 20:48		Nov-21-13 21:10		Nov-21-13 21:33	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		130	5.00	239	10.0	7240	100	11500	200	2610	50.0	4630	50.0
Sulfate		80.2	10.0	108	20.0	361	200	558	400	244	100	166	100
TDS by SM2540C SUB: E871002	***Extracted:***												
	Analyzed:	Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00		Nov-25-13 11:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		608	5.00	942	5.00	12200	5.00	21500	5.00	5020	5.00	10600	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 474413

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Bernie Bockisch
Project Location: Eunice, NM

Date Received in Lab: Wed Nov-20-13 10:07 am
Report Date: 03-DEC-13
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	474413-013		474413-014			
	Field Id:	DUP-1-111913		Trip Blank			
	Depth:						
	Matrix:	WATER		WATER			
	Sampled:	Nov-19-13 00:00		Nov-18-13 11:00			
Alkalinity by SM2320B SUB: E871002	***Extracted:***						
	Analyzed:	Nov-25-13 10:46					
	Units/RL:	mg/L	RL				
Alkalinity, Total (as CaCO3)		238	4.00				
BTEX by EPA 8021B	***Extracted:***	Nov-22-13 12:00		Nov-22-13 12:00			
	Analyzed:	Nov-22-13 20:58		Nov-22-13 21:14			
	Units/RL:	mg/L	RL	mg/L	RL		
Benzene		ND	0.00100	ND	0.00100		
Toluene		ND	0.00200	ND	0.00200		
Ethylbenzene		ND	0.00100	ND	0.00100		
m,p-Xylenes		ND	0.00200	ND	0.00200		
o-Xylene		ND	0.00100	ND	0.00100		
Total Xylenes		ND	0.00100	ND	0.00100		
Total BTEX		ND	0.00100	ND	0.00100		
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-21-13 21:56					
	Analyzed:	Nov-21-13 21:56					
	Units/RL:	mg/L	RL				
Chloride		2030	20.0				
Sulfate		171	40.0				
TDS by SM2540C SUB: E871002	***Extracted:***						
	Analyzed:	Nov-25-13 11:00					
	Units/RL:	mg/L	RL				
Total dissolved solids		4110	5.00				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 474413,

Project ID: 046121

Lab Batch #: 928368 **Sample:** 474413-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 17:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 928368 **Sample:** 474413-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 17:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 928368 **Sample:** 474413-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 18:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 928368 **Sample:** 474413-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 18:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 928368 **Sample:** 474413-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 18:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 474413,

Project ID: 046121

Lab Batch #: 928368 **Sample:** 474413-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 19:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 928368 **Sample:** 474413-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 19:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 928368 **Sample:** 474413-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 19:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 928368 **Sample:** 474413-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 20:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 928368 **Sample:** 474413-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 20:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 474413,

Project ID: 046121

Lab Batch #: 928368 **Sample:** 474413-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 20:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 928368 **Sample:** 474413-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 21:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 928602 **Sample:** 474413-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/13 01:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 928602 **Sample:** 474413-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/13 01:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 928368 **Sample:** 647436-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 16:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 474413, **Project ID:** 046121

Lab Batch #: 928602 **Sample:** 647570-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/13 00:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 928368 **Sample:** 647436-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 15:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 928602 **Sample:** 647570-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 23:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 928368 **Sample:** 647436-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 15:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 928602 **Sample:** 647570-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 23:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 474413,

Project ID: 046121

Lab Batch #: 928368 **Sample:** 474413-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 16:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 928602 **Sample:** 474569-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 23:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 928368 **Sample:** 474413-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/13 16:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 928602 **Sample:** 474569-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/13 00:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 474413 **Project ID:** 046121

Analyst: ALA **Date Prepared:** 11/25/2013 **Date Analyzed:** 11/25/2013

Lab Batch ID: 928464 **Sample:** 928464-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	261	104	250	263	105	1	80-120	20	

Analyst: ARM **Date Prepared:** 11/22/2013 **Date Analyzed:** 11/22/2013

Lab Batch ID: 928368 **Sample:** 647436-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0906	91	0.100	0.0931	93	3	70-125	25	
Toluene	<0.00200	0.100	0.0944	94	0.100	0.0951	95	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0910	91	0.100	0.0902	90	1	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.205	103	0.200	0.205	103	0	70-131	25	
o-Xylene	<0.00100	0.100	0.0990	99	0.100	0.0991	99	0	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 474413 **Project ID:** 046121

Analyst: ARM **Date Prepared:** 11/22/2013 **Date Analyzed:** 11/22/2013

Lab Batch ID: 928602 **Sample:** 647570-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0904	90	0.100	0.0884	88	2	70-125	25	
Toluene	<0.00200	0.100	0.0816	82	0.100	0.0884	88	8	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0701	70	0.100	0.0850	85	19	71-129	25	L
m,p-Xylenes	<0.00200	0.200	0.148	74	0.200	0.193	97	26	70-131	25	F
o-Xylene	<0.00100	0.100	0.0759	76	0.100	0.0943	94	22	71-133	25	

Analyst: AMB **Date Prepared:** 11/21/2013 **Date Analyzed:** 11/21/2013

Lab Batch ID: 928282 **Sample:** 647359-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	25.0	24.0	96	25.0	24.1	96	0	80-120	20	
Sulfate	<2.00	25.0	24.9	100	25.0	25.5	102	2	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 474413 **Project ID:** 046121

Analyst: ANS **Date Prepared:** 11/23/2013 **Date Analyzed:** 11/23/2013

Lab Batch ID: 928327 **Sample:** 928327-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	908	91	1000	904	90	0	80-120	10	

Analyst: ANS **Date Prepared:** 11/25/2013 **Date Analyzed:** 11/25/2013

Lab Batch ID: 928453 **Sample:** 928453-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	1000	100	1000	932	93	7	80-120	10	

Analyst: ANS **Date Prepared:** 11/27/2013 **Date Analyzed:** 11/27/2013

Lab Batch ID: 928640 **Sample:** 928640-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	890	89	1000	950	95	7	80-120	10	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Mark Owen #9

Work Order #: 474413

Lab Batch #: 928282 **Project ID:** 046121

Date Analyzed: 11/21/2013 **Date Prepared:** 11/21/2013 **Analyst:** AMB

QC- Sample ID: 474410-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	25100	12500	43300	146	80-120	X
Sulfate	1020	12500	15300	114	80-120	

Lab Batch #: 928282

Date Analyzed: 11/21/2013 **Date Prepared:** 11/21/2013 **Analyst:** AMB

QC- Sample ID: 474413-009 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	7240	2500	10500	130	80-120	X
Sulfate	361	2500	3240	115	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 474413 **Project ID:** 046121

Lab Batch ID: 928368 **QC- Sample ID:** 474413-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/22/2013 **Date Prepared:** 11/22/2013 **Analyst:** ARM

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0241	0.100	0.116	92	0.100	0.112	88	4	70-125	25	
Toluene	<0.00200	0.100	0.0978	98	0.100	0.0925	93	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0933	93	0.100	0.0901	90	3	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.204	102	4	70-131	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0980	98	3	71-133	25	

Lab Batch ID: 928602 **QC- Sample ID:** 474569-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/22/2013 **Date Prepared:** 11/22/2013 **Analyst:** ARM

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0957	96	0.100	0.0913	91	5	70-125	25	
Toluene	<0.00200	0.100	0.0956	96	0.100	0.0915	92	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0922	92	0.100	0.0853	85	8	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.192	96	9	70-131	25	
o-Xylene	<0.00100	0.100	0.100	100	0.100	0.0938	94	6	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 474413

Lab Batch #: 928464 **Project ID:** 046121
Date Analyzed: 11/25/2013 10:46 **Date Prepared:** 11/25/2013 **Analyst:** ALA
QC- Sample ID: 474413-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	330	330	0	20	

Lab Batch #: 928464
Date Analyzed: 11/25/2013 10:46 **Date Prepared:** 11/25/2013 **Analyst:** ALA
QC- Sample ID: 474413-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	336	337	0	20	

Lab Batch #: 928327
Date Analyzed: 11/23/2013 14:27 **Date Prepared:** 11/23/2013 **Analyst:** ANS
QC- Sample ID: 474610-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	2310	2420	5	10	

Lab Batch #: 928327
Date Analyzed: 11/23/2013 14:27 **Date Prepared:** 11/23/2013 **Analyst:** ANS
QC- Sample ID: 474610-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	527	524	1	10	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 474413

Lab Batch #: 928453 **Project ID:** 046121
Date Analyzed: 11/25/2013 11:00 **Date Prepared:** 11/25/2013 **Analyst:** ANS
QC- Sample ID: 474413-002 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	4640	<5.00	NC	10	U

Lab Batch #: 928453
Date Analyzed: 11/25/2013 11:00 **Date Prepared:** 11/25/2013 **Analyst:** ANS
QC- Sample ID: 474413-012 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	8700	<5.00	NC	10	U

Lab Batch #: 928640
Date Analyzed: 11/27/2013 12:19 **Date Prepared:** 11/27/2013 **Analyst:** ANS
QC- Sample ID: 474413-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	3720	3840	3	10	

Lab Batch #: 928640
Date Analyzed: 11/27/2013 12:19 **Date Prepared:** 11/27/2013 **Analyst:** ANS
QC- Sample ID: 474413-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	5020	5170	3	10	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 316680 Page 1 of 2

Company-City: CRA - Midland TX **Phone:** 432-686-0086

Lab Only: 474413

Project Name-Location: Mark Owen #9 / Eunice NM ☐ Previously done at XENCO **Project ID:** 046121

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM **Proj. Manager (PM):** Bernie Bockisch

E-mail Results to ☒ PM and KLambert@CRAworld.com **Fax No:**

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name Warren Mauver **Signature**

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	BTEX 8021B	TDS 2540 C	Alkalinity 310.1	Chlorides EPA 300	Sulfates EPA 300	TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	Addn: Date Rcv. by: From:
1	MW-9-111913	11/19/2013	1530		W		X														X	X	X	X	X					1
2	MW-8-111913		1540																											2
3	MW-7-111913		1550																											3
4	MW-6-111913		1600																											4
5	MW-5-111913		1610																											5
6	MW-4-111913		1620																											6
7	MW-3-111913		1630																											7
8	MW-2-111913		1640																											8
9	MW-1-111913		1650																											9
10	RW-1-111913		1700																											10

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1)	11-20-13	2)	11-20-13
3)	1007	4)	10:07
5)		6)	

Total Containers per COC: Cooler Temp: 0.5+/-0.5 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

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☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 316681 Page 2 of 2

Company-City: CRA Midland TX **Phone:** 432-686-0086
Lab Only: 474413
Project Name-Location: Mark Owen #9 / Eunice NM ☐ Previously done at XENCO **Project ID:** 046121
TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM **Proj. Manager (PM):** Bernie Bockisch
E-mail Results to: ☒ PM and KLambert@CRAworld.com **Fax No:**
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:
Quote/Pricing: **P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)
Sampler Name: Warren Mavrer **Signature:**

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives
1	MW-10-111913	11/19/2013	1710		W		X				
2	MW-11-111913	↓	1720								
3	Dup-1-111913	↓	—				↓				
4	Trip Blank	11-18-13	11:00					2			
5											
6											
7											
8											
9											
10					↓						

VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs
VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:
PAHs SIM 8310 8270
TX-1005 DRO GRO MA EPH MA VPH
SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL
OC Pesticides PCBs Herbicides OP Pesticides
Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2
SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)
EDB / DBCP
BTEX 8021B
TDS 2540 C
Alkalinity 310.1
Chlorides EPA 300
Sulfates EPA 300
TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d
Addn: PAH above mg/L W, mg/Kg S Highest Hit
Hold Samples (Surcharges will apply and are pre-approved)
Sample Clean-ups are pre-approved as needed
Remarks
Addn: Date Rcv. by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1)	11/20/13 10:07	2)	11-20-13 10:07
3)		4)	
5)		6)	

Total Containers per COC: Cooler Temp: -0.5 +1= 0.5°C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 11/20/2013 10:07:00 AM

Work Order #: 474413

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Candace James Date: 11/20/2013
Candace James

Checklist reviewed by: Kelsey Brooks Date: 11/20/2013
Kelsey Brooks