Groundwater Monitoring Program
CSD Section E.19

Second Quarter 2014
Groundwater Monitoring Results

Freeport-McMoRan Oil & Gas
Inglewood Oil Field

July 15, 2014

Cardno ENTRIX
Shaping the Future

ENVIRON

Document Information

Prepared for	Freeport-McMoRan Oil & Gas (FM O&G)
Project Name	Inglewood Oil Field Land Treatment Units Los Angeles, California
	Second Quarter 2014 Groundwater Monitoring Results *Groundwater Monitoring Program,* *Inglewood Oil Field, CSD Condition Number 19*
Project Number	60861040 (Cardno ENTRIX), 0534271A (ENVIRON)
Project Manager	Daniel Tormey, PhD, PG
Date	July 15, 2014

Prepared for:

Freeport-McMoRan Oil & Gas
5640 South Fairfax Avenue, Los Angeles, CA 90056 USA

Prepared by:

Cardno ENTRIX
12100 Wilshire Blvd, Ste. 250, Los Angeles, CA 90025

ENVIRON International Corp.
707 Wilshire Blvd, Ste. 4950, Los Angeles, CA 90017

This Page Intentionally Left Blank

Table of Contents

Figures

Tables

Appendices

Acronyms

BOD5	Biochemical Oxygen Demand 5
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
COC	chain-of-custody
County	Los Angeles County Board of Supervisors
CSD	Community Standards District
DTSC	Department of Toxic Substance Control
EPA	Environmental Protection Agency
FM O&G	Freeport-McMoRan Oil & Gas
LARWQCB	Los Angeles Regional Water Quality Control Board
m	meters
MCL	Maximum Containment Level
MTBE	Methyl Tert-Butyl Ether
ppb	parts per billion
Site	Inglewood Oil Field
TDS	Total Dissolved Solids
TPH-DRO	Total Petroleum Hydrocarbons as Diesel Range Organics
TRPH	Total Recoverable Petroleum Hydrocarbons

Professional Certification

Groundwater Monitoring Program
CSD Section E.19

Second Quarter 2014 Groundwater Monitoring Results

Inglewood Oil Field
Los Angeles, California

This report has been prepared by ENVIRON under the professional supervision of the Principal(s) and/or staff whose signature(s) appear hereon.

The scope of work and specifications are presented in accordance with generally accepted professional geologic practice. There is no other warranty either expressed or implied.

July 15, 2014

Daniel Tormey, PhD, PG
State of California Professional Geologist #5927

Date

This Page Intentionally Left Blank

1 Introduction

Cardno ENTRIX and ENVIRON were retained by Freeport-McMoRan Oil & Gas (FM O&G) to prepare this report to describe the results of the groundwater monitoring activities conducted during the Second Quarter 2014 at the Inglewood Oil Field (site) which is located in the Baldwin Hills area of Los Angeles County as depicted in Figure 1.

The Los Angeles County Board of Supervisors (County) approved the Baldwin Hills Community Standards District (Baldwin Hills CSD) to establish regulations, safeguards, and controls for FM O&G's proposed drilling and oil production over the next 20 years. The Baldwin Hills CSD and the Los Angeles Regional Water Quality Control Board (LARWQCB) requested a groundwater-monitoring network to evaluate potential impacts associated with the site. Specifically, the LARWQCB requested that the network focus on preferred pathways in native canyon areas and suggested existing catch basins as likely target locations for the monitoring wells to determine impacts of oil field operations on groundwater quality.

The purpose of this report is to present the results for the quarterly monitoring and sampling activities in accordance with the approved *Groundwater Monitoring Program and Workplan, Inglewood Oil Field, CSD Section E.19*. The monitor wells to meet this purpose include MW-3, MW-4A, MW-4B, MW-4C, and MW-5, MW-6, and MW-7. The objective of the monitoring is to evaluate potential impacts to groundwater quality associated with the increased field operations. The monitor well locations are presented in Figure 2.

The remainder of this document is organized as follows:

- Chapter 2 describes the environmental setting;
- Chapter 3 describes the groundwater monitoring methods;
- Chapter 4 presents the results of the groundwater monitoring activities; and,
- Chapter 5 presents the reference list.

This Page Intentionally Left Blank

2 Environmental Setting

2.1 Geology

Numerous studies of the Baldwin Hills have concluded that the uplift of the Baldwin Hills has disconnected water-bearing sediments from groundwater supplies in the Los Angeles Basin, and that the formations are folded, faulted, and the limited supply potential is not appropriate for a water supply (DWR 1961, LARWQCB 2001, USGS 2003, Los Angeles County 2008). The prominent aquifer systems in the subsurface of the Los Angeles Basin are actually exposed at the surface in the Baldwin Hills, as is the Pico Formation, which is typically taken as the base of the fresh water supply aquifers (DWR 1961, USGS 2003). In groundwater models of freshwater flow in the Los Angeles Basin aquifer systems (USGS 2003), the Baldwin Hills is modeled as a "no flow" zone; that is, since the sediments beneath the Baldwin Hills are disconnected from the regional aquifers, groundwater flow is discontinuous across the Baldwin Hills. The following information summarizes the topographic, geologic, and hydrogeologic data that leads to these findings.

2.2 Topography and Drainage

The site is located in the Baldwin Hills, which form part of a chain of low hills along the Newport-Inglewood Fault Zone. The Baldwin Hills are the highest of the hills along this fault zone, reaching a height of 511 feet (153 meters [m]) above mean sea level. Sediments of the Baldwin Hills have been considerably warped and faulted. The north flank of the Baldwin Hills has been deeply incised by erosion, whereas the south flank slopes gently to the Torrance Plain and Rosecrans Hills.

No perennial or intermittent streams, as defined by the U.S. Geological Survey, are present within the field boundaries (Los Angeles County 2008). Surface runoff occurs primarily as sheetflow across drilling pads, structure pads, and slopes eventually flowing into ephemeral gullies and drainage ditches. Five surface water catch basins are located along these drainages within the CSD boundary to regulate discharge from the site and retain oil on-site in an event of a spill. The catch basins are depicted in Figure 2 and are identified as follows:

- LAI Basin;
- Stocker Basin;
- Vickers I Basin;
- Lower Vickers II Basin; and,
- Upper Vickers II Basin.

Runoff from these basins is discharged to the Los Angeles County storm drain system. Two of the basins, LAI and Stocker, ultimately discharge through the storm drain system into Centinela Creek, which then discharges to Ballona Creek. Centinela Creek is located approximately 1.2 miles southwest of the active, surface field boundary. The other three basins, Lower Vickers II, Upper Vickers II and Vickers I, discharge to the storm drain system, ultimately reaching Ballona Creek, which is located approximately 0.2 mile south of the active, surface field boundary at the closet point.

2.3 Site Hydrogeology

The Baldwin Hills are generally comprised of non-waterbearing strata that straddle the West Coast, Central, and Santa Monica groundwater basins. Groundwater within the Baldwin Hills, where present, is limited to perched zones located within canyon alluvium and weathered bedrock (DWR 1961, LARWQCB 2001). There are no domestic or industrial water supply wells located within the active surface field boundary, or within one mile of the Baldwin Hills.

The Baldwin Hills are underlain by a faulted, northwest-trending anticline, which is developed in sediments of Tertiary and Pleistocene age. Two principal northwesterly trending, nearly parallel faults offset the central portion of the hills, developing a downdropped block or graben across the crest of the anticline. The more easterly of the two structures is the Newport-Inglewood fault; the other fault is unnamed. Both faults are offset by secondary cross faults that trend northeast. The block east of the Newport-Inglewood fault is composed of sediments of Pliocene age and older and is cut by several small unnamed faults. One such fault extends along the northeast border of the Baldwin Hills and may be related to the prominent escarpment in that area. The Slauson Avenue fault extends northeast beyond the Baldwin Hills and offsets aquifers of the San Pedro formation. The Baldwin Hills form a complete barrier to ground water movement where the essentially nonwater-bearing Pico formation crops out. The Pico Formation is typically taken as the base of the freshwater zone across the Los Angeles Basin.

Potable groundwater aquifers of the Los Angeles Basin lie adjacent to the Baldwin Hills. Based on a hydrogeologic cross section completed along Ballona Creek (USGS 2003), the base of fresh water is highly variable as a result of faulting along the Newport-Inglewood Fault Zone. Along the north-northwest boundary of the Baldwin Hills, west of the Newport-Inglewood Fault Zone, groundwater is present in the Silverado Aquifer to a depth of 200 to 300 feet. Further west from the fault zone, the Silverado Aquifer thickens and groundwater is present to a depth of approximately 450 feet. The essentially non-waterbearing Pico Formation, commonly taken as the base of the fresh water aquifers, lies below the Silverado Formation (DWR 1961). East of the Newport-Inglewood Fault Zone and the Baldwin Hills, the base of fresh water is much deeper than west of the fault and numerous aquifers are present. Golden State Water Company Sentney Well #8 (State well No. 2S/14W/Sec 5/D08 or County well No. 2626P), located east of the fault zone, along Ballona Creek and approximately 1.2 miles north of the active surface field boundary, produces water from five separate stratigraphic intervals within aquifers at depths ranging from 70 to 370 feet. These depths correspond to the Exposition, Gage, Lynwood, and Silverado aquifers. Similar to west of the fault zone, the non-waterbearing Pico Formation lies below the Silverado Aquifer (DWR 1961).

Within the site, localized, perched groundwater has been measured at depths ranging from approximately 25 to 200+ feet bgs. Based on existing information, groundwater within this upper waterbearing formation is an unsaturated zone with localized perched water-bearing zones that are not continuous across the Baldwin Hills, and are not connected to the regional aquifer systems in the Los Angeles Basin. Because of this lack of water, the geological formations beneath the Baldwin Hills are not suitable for water supply (DWR 1961, USGS 2003, County of Los Angeles 2008).

3 Groundwater Monitoring Methods

This section summarizes the methods utilized during the groundwater monitoring activities. The monitoring activities proceeded in accordance with the Groundwater Monitoring Program and Workplan, Inglewood Oil Field, CSD Section E.19. The field activities and sampling methods are described in detail below.

3.1 Monitor Well Array

The objective of the groundwater monitoring program is to evaluate and monitor groundwater resources that may be affected by increased oil field operations. The monitor wells for this purpose were placed down-gradient of the catch basins on the site. The catch basins and associated monitor well are presented in Figure 2 and as follows:

- LAI Basin (MW-3);
- Stocker Basin (MW-4a, MW-4b, MW-4c);
- Vickers I Basin (MW-5);
- Lower Vickers II Basin (MW-6); and,
- Upper Vickers II Basin (MW-7).

3.2 Groundwater Monitoring and Sampling

The groundwater monitoring activities included the collection of depth-to-water measurements at each well and the collection of groundwater samples for chemical analysis. Activities were conducted on May 22, 2014, in accordance with the U.S. Environmental Protection Agency's (EPA) *Standard Operating Procedures for the Standard/Well-Volume Method for Collecting Ground-Water Samples* (May 2002), and in conformance with the general procedures outlined below. All equipment used for well evacuation and sampling was thoroughly washed with tap water, laboratory detergent (Alconox) and rinsed with purified deionized water prior to and after use.

3.2.1 Water Level Monitoring

Prior to purging and sampling each well, an electronic water level probe was used to measure depth-to-water and total depth in each well. Multiple measurements of water level were collected from a surveyed reference point (the top of the well casing) at each well, and purging and sampling was not performed until three successive readings had stabilized to within 0.01 foot. All water levels and total depth measurements were taken to the nearest 0.01 foot, and all measurements were recorded on field data sheets.

3.2.2 Well Purging

Prior to collecting a groundwater sample, each well was purged until dewatered or at least three casing volumes of groundwater were removed. In the case of dewatered wells, a sample was collected when recharge had restored the water column to 80 percent of the original height. The pH, turbidity, specific conductivity, and temperature of the purged water were measured during well purging as a measure of the aquifer conditions. Stability was considered to be achieved when the following conditions were met:

- The well was dewatered; or
- At least three casing volumes of water were removed;

- Sequential readings of pH taken greater than 0.5 casing volumes apart were within 0.1 pH unit; and,
- Sequential readings of specific conductivity taken greater than 0.5 casing volumes apart were within 3 percent; and,
- Sequential readings of turbidity taken greater than 0.5 casing volumes apart were below 10 nephelometric turbidity units (NTU) or within 10 percent.

A Grundfos® submersible pump was used to purge the monitor wells. Purge water was transferred to 55-gallon drums located in a secure area at the project site for subsequent processing through the facility's treatment and disposal system. The field measurements were recorded on Well Monitoring Data Sheets that are provided in Appendix A. The stabilized water quality parameters for each well are presented in Table 2.

3.2.3 Groundwater Sample Collection and Analysis

All sample containers were labeled using a waterproof marker and the label was affixed to the containers immediately before samples were taken for each individual well. Sample labels included the sampler's initials, location ID, time, analyses to be performed, and the preservation method used.

A clean pair of nitrile gloves was worn for sample collection at each well. Samples were collected from each well immediately after purging. Groundwater was sampled using a disposable bailer equipped with a bottom-emptying device, which allowed emptying the bailer from the bottom at a slow, controlled rate. The groundwater samples were decanted into the appropriate sample containers for each analyte. The sample containers were chemically preserved by the laboratory prior to the field activities. Samples collected for volatile organics analyses were handled with extra care to minimize any turbulence or aeration when filling the bottles. The bottles and caps were overfilled to form a convex meniscus and after collection, the sample container was inverted to check for the presence of air in the sample. If an air bubble was present, the sample was opened and the procedure repeated.

All samples were placed in individual Ziploc®-type bags, sealed, and stored in coolers on ice to maintain samples at 4°C prior to and during shipment to the analytical laboratory. Ice was sealed in double plastic bags. A chain-of-custody manifest was completed on-site and accompanied the samples to the lab. The samples were transferred to the laboratory within 24 hours of sampling.

All samples were analyzed for:

- Total Petroleum Hydrocarbons as Diesel Range Organics (TPH-DRO) by US Environmental Protection Agency (USEPA) Method 8015M;
- pH units by USEPA Method 150.2;
- Total Recoverable Petroleum Hydrocarbons (TRPH) by USEPA Method 418.1;
- Total Dissolved Solids (TDS) by USEPA method SM2540C;
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and Methyl Tert-Butyl Ether (MTBE) by USEPA Method 8260B;
- Metals by the USEPA 200 series;
- Biochemical Oxygen Demand 5 (BOD5) by USEPA method 405.1; and,
- Nitrate and Nitrite by Ion Chromatography.

In addition, all samples were also analyzed for TPH-DRO with the silica gel filtering method, which removes hydrocarbons with a non-petroleum origin such as natural alcohols and other short chain organic molecules. All samples were analyzed by American Analytics, a state-certified laboratory located in Chatsworth, California, with the exception of BOD5, which was analyzed by American Environmental

Testing Laboratory in Burbank, California. Strict chain-of-custody (COC) procedures were maintained for all samples collected.

This Page Intentionally Left Blank

4 Groundwater Monitoring Results

The results of the Second Quarter 2014 groundwater monitoring event are presented below.

4.1 Groundwater Results

Groundwater sampling was conducted on May 22, 2014 and involved the collection of samples from monitor wells MW-6 and MW-7. Monitor wells MW-3, MW-4A, MW-4B, MW-4C, and MW-5 were dry or contained insufficient water at the time of monitoring, so no sample was collected from these wells.

4.1.1 Groundwater Elevations

The groundwater elevation data presented in Table 1 indicates that there are several discontinuous perched zones across the site. This finding is consistent with results of the prior groundwater sampling events as well as other studies of the site, which determined that the water-bearing zones in the Baldwin Hills are internally discontinuous, as well as discontinuous with water supply aquifers elsewhere in the Los Angeles Basin.

4.1.2 Groundwater Analytical Results

The following analytes were detected in monitor wells MW-6 and MW-7:

- **MW-6.** TDS was measured at 2,600 mg/L, pH was measured at 7.0, TPH-DRO was detected at a concentration of 0.44 mg/L prior to silica gel filtering and less than the 0.10 mg/L detection limit after, and BOD5 was measured at 37.4 mg/L.
- **MW-7.** TDS was measured at 1,900 mg/L, pH was measured at 6.7, TPH-DRO was detected at a concentration of 0.39 mg/L prior to silica gel filtering and less than the 0.10 mg/L detection limit after, nitrate was detected at a concentration of 7.9 mg/L, and BOD5 was measured at 35.3 mg/L.

The analytical results were all below the established state Maximum Containment Level (MCL) for drinking water standards.The results are summarized in Tables 3 and 4. Table 5 presents the cumulative analytical results and monitoring data collected since April 2010 and charts plotting TPH-DRO concentrations and groundwater elevation are attached in Appendix B. Laboratory reports are provided in Appendix C.

This Page Intentionally Left Blank

5 References

California Code of Regulation. Chapter 15. Domestic Water Quality and Monitoring Regulations. Article 16 - Secondary Water Standards. May 2006.

California Department of Public Health. Maximum Contamination Levels and Regulatory Dates Drinking Water, US EPA vs. California. November 2008.

California Department of Water Resources (DWR). 1961. Bulletin No. 104, Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A, Ground Water Geology.

ENTRIX. 2009. Groundwater Monitoring Program and Workplan, Inglewood Oil Field, CSD Condition Number 19.

Los Angeles County. 2008 Final Environmental Impact Report, Baldwin Hills Community Standards District (FEIR) dated October 2008, Los Angeles County.

G. Chernoff, W. Bosan, D. Oudiz. 2008. Determination of a Southern California Regional Background Arsenic Concentration in Soil. Department of Toxic Substance Control, Sacramento, California.

Gronberg, J.M. 2011. Map of Arsenic in Groundwater of the United States. Sacramento, CA. Website accessed July 3, 2013: http://water.usgs.gov/GIS/metadata/usgswrd/XML/arsenic_map.xml#stdorder.

Los Angeles Regional Water Quality Control Board (LARWQCB). 2013. Order No. R4-2013-23, Waste Discharge Requirements for Plains Exploration & Production Company. (Oil Field and Land Treatment Unit Operations), File No. 00-117, adopted April 26, 2001, revised February 7.

Freeport-McMoRan Oil & Gas (FM O&G). 2013. Stormwater Pollution Prevention Plan for Industrial Activities at the Inglewood Oil Field, June.

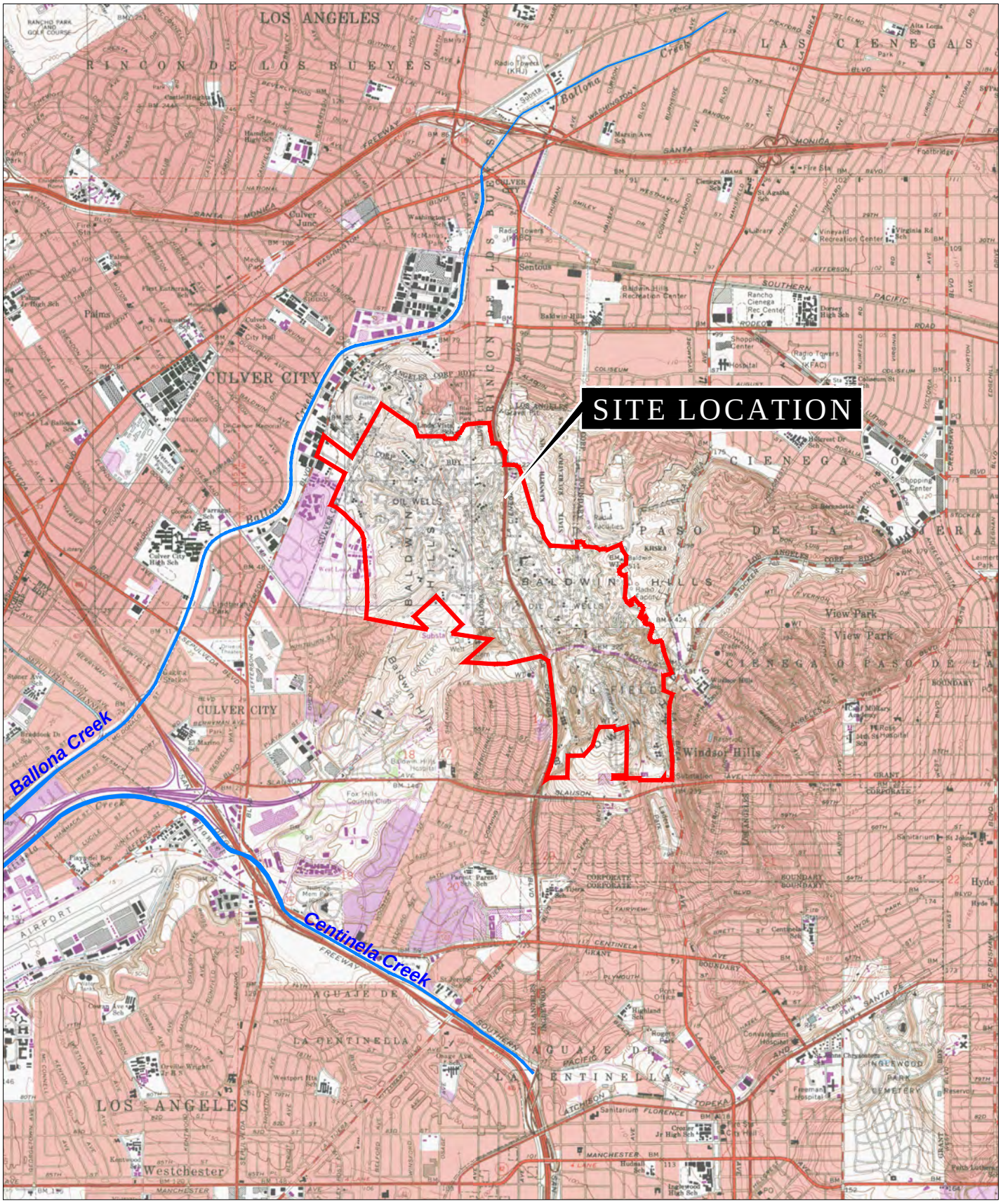
U.S. Environmental Protection Agency (EPA). 2002. Example Standard Operating Procedure: Standard Operating Procedure for the Standard/Well-Volume Method for Collecting a Ground-Water Sample. ATTACHMENT 4 in Groundwater Sampling Guidelines for Superfund and RCRA Project Managers, May 2002, pgs. 39-53.

U.S. EPA. 2012. Basic Information about the Arsenic Rule. Washington, D.C. Website accessed July 3, 2012: http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/Basic-Information.cfm

U.S. Geological Survey (USGS). 2003. Geohydrology, Geochemistry, and Ground-Water Simulation-Optimization of the Central and West Coast Basins, Los Angeles, County, California. US Geological Survey, Water Resources Investigations Report 03-4065.

This Page Intentionally Left Blank

FIGURES



Cardno ENTRIX

Regional Location Map

Freeport–McMoRan Oil & Gas
Inglewood Oil Field

NOT TO SCALE	PROJECT No.	FIGURE. No.	DATE
Drawn By: JJD	6086104	1	7/14

LEGEND

- RETENTION BASIN
- MONITOR WELL LOCATION
- LEASE BOUNDARY
- CSD BOUNDARY

GROUNDWATER ELEVATION (MSL)

- 160 – 130 FEET
- 130 – 100 FEET
- <100 FEET
- DRY (TOTAL DEPTH–MSL)

N

0 1350 2700

GRAPHIC SCALE IN FEET

Cardno ENTRIX

Monitor Well Location Map and Groundwater Elevations

FREEPORT MCMORAN OIL & GAS
INGLEWOOD OIL FIELD

Scale 1:1250	PROJECT No.	FIGURE. No.	DATE
Drawn By: CO	6086104	2	7/14

TABLES

TABLE 1

Second Quarter 2014

Groundwater Elevation Data

Freeport-McMoRan Oil & Gas - Inglewood Oil Field

Los Angeles, California

Well ID	Date	Wellhead Elevation	Depth-to-Water	Groundwater Elevation
		(feet msl)	(feet btoc)	(feet msl)
MW-3	5/22/2014	197.51	Dry	---
MW-4a	5/22/2014	230.28	Dry	---
MW-4b	5/22/2014	230.30	Dry	---
MW-4c	5/22/2014	230.63	Dry	---
MW-5	5/22/2014	172.82	Dry	---
MW-6	5/22/2014	97.62	63.64	33.98
MW-7	5/22/2014	186.18	46.14	140.04

NOTES:

btoc = below top of casing

msl = mean sea level

TABLE 2

Second Quarter 2014

Stabilized Groundwater Quality Sampling Parameters

Freeport-McMoRan Oil & Gas - Inglewood Oil Field

Los Angeles, California

Monitoring Well	Sampling Date	Well Diameter	Volume Purged	Temperature	pH	Electrical Conductivity	Turbidity	Comments
		(inches)	(gal)	(°F)	(standard units)	(uS/cm)	(NTUs)	
MW-3	5/22/2014	2	---	---	---	---	---	Dry
MW-4a	5/22/2014	2	---	---	---	---	---	Dry
MW-4b	5/22/2014	2	---	---	---	---	---	Dry
MW-4c	5/22/2014	2	---	---	---	---	---	Dry
MW-5	5/22/2014	2	---	---	---	---	---	Dry
MW-6	5/22/2014	2	6.0	74.3	6.8	3,716	54	
MW-7	5/22/2014	2	6.0	73.9	6.7	2,950	41	

NOTES:

MW- 3, 4A, 4B, 4C, and 5 contained insufficient water for purging or sampling

Samples were filtered with 0.45 micron filter while sampling (Turbidity values reduced to approximately 15 NTU's)

TABLE 3

Second Quarter 2014

Groundwater Analytical Results

TPH, VOCs, and TRPH

Freeport-McMoRan Oil & Gas - Inglewood Oil Field

Los Angeles, California

Sample Location	Date Collected	TPH-DRO	TPH-DRO (w/Silica Gel Filtering)	VOCs					TRPH
		C_{10}-C_{28}	C_{10}-C_{28}	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	
		(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)
MW-6	5/22/2014	0.44	<0.10	<0.50	<0.50	<0.50	<1.5	<2.0	<5.0
MW-7	5/22/2014	0.39	<0.10	<0.50	<0.50	<0.50	<1.5	<2.0	<5.0

Notes:

<# indicates compound was not detected above the indicated method reporting limit.

µg/L = micrograms per liter.

mg/L = milligrams per liter.

MW- 3, 4A, 4B, 4C, and 5 contained insufficient water for purging or sampling

All samples analyzed by American Analytics, Chatsworth, CA.

TPH-DRO = Diesel Range Organics as part of Total Petroleum Hydrocarbon with carbon chain differentiation by EPA Method 8015M

VOCs = Volatile Organic Compounds by EPA Method 8260B

MTBE = Methyl-tert-Butyl Ether

TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1

TABLE 4

Second Quarter 2014
Groundwater Analytical Results
Metals, Nitrate, Nitrite, BOD5, TDS, and pH
Freeport-McMoRan Oil & Gas - Inglewood Oil Field
Los Angeles, California

Sample Location	Date Collected	Nitrate	Nitrite	Metals							BOD5	Total Dissolved Solids (TDS)	pH
				Arsenic	Barium	Chromium	Cobalt	Copper	Lead	Zinc			
		(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	
MW-6	5/22/2014	<0.50	<15	<7.0	<100	<10	<50	<25	<10	<50	37.4	2,600	7.0
MW-7	5/22/2014	7.9	<6.0	<7.0	<100	<10	<50	<25	<10	<50	35.3	1,900	6.7

Notes:

<# indicates compound was not detected above the indicated method reporting limit.
µg/L = micrograms per liter.
mg/L = milligrams per liter.
MW- 3, 4A, 4B, 4C, and 5 contained insufficient water for purging or sampling
All samples analyzed by American Analytics, Chatsworth, CA with the exception of BOD5 analyzed by American Environmental Testing Laboratory, Burbank, CA
EPA = United States Environmental Protection Agency
BOD5 20C = Biochemical Oxygen Demand at 20°C by EPA Method 405.1
Nitrate/Nitrite by Ion Chromatography (EPA Method 300)
Metals by EPA Method 6010B
TDS = Total Dissolved Solids by EPA Method SM2540C
PH by EPA Method 150.1

TABLE 5

Historical Groundwater Analytical Data
Freeport-McMoRan Oil & Gas- Inglewood Oil Field
Los Angeles, California

Well ID	Date	TPH-DRO	TPH-DRO (w/Silica Gel Filtering)	BTEX/MtBE	Total Recoverable Petroleum Hydrocarbons (TRPH)	Total Dissolved Solids (TDS)	Nitrate and Nitrite	Metals	BOD5	COMMENTS
		C_{10}-C_{28}	C_{10}-C_{28}							
		(mg/L)	(mg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)	
MW-3	Apr-10	1.3	0.14	0.95 toluene	<5.0	900	NA	NA	NA	
	Jun-10	1.4	<0.10	0.76 toluene	<5.0	780	NA	NA	NA	
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-11	1.1	<0.10	5.8 toluene	<5.0	1100	Below Detection Limit	33 arsenic	40.1	
	Jun-11	1.3	0.18	Below Detection Limit	<5.0	850	<0.20	28 arsenic	50.5	
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Nov-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-12	2.1	0.34	0.85 benzene, 0.57 toluene, 0.5 ethylbenzene, 1.73 xylenes	<5.0	760	Below Detection Limit	37 arsenic, 130 barium, 32 chromium, 36 copper, 4.2 lead, 88 zinc	43.4	
	Apr-12	1.3	0.19	Below Detection Limit	<5.0	810	Below Detection Limit	28 arsenic, 73 barium, 15 chromium, 19 copper, 79 zinc	40.9	
	Aug-12	0.99	0.23	Below Detection Limit	<5.0	764	0.1 nitrate	29 arsenic, 16 zinc	Feb-00	
	Nov-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-13	0.73	<0.10	Below Detection Limit	<5.0	880	Below Detection Limit	32 arsenic	52.1	
	May-13	0.78	<0.10	Below Detection Limit	<5.0	910	Below Detection Limit	28 arsenic	57.6	
	Aug-13	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Nov-13	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Mar-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
MW-4a	Apr-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Mar-11	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-12	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Apr-12	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Aug-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-13	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	May-13	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Aug-13	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Nov-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
MW-4b	Apr-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Apr-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Aug-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Aug-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
MW-4c	Apr-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry

TABLE 5

Historical Groundwater Analytical Data

Freeport-McMoRan Oil & Gas- Inglewood Oil Field

Los Angeles, California

Well ID	Date	TPH-DRO	TPH-DRO (w/Silica Gel Filtering)	BTEX/MtBE	Total Recoverable Petroleum Hydrocarbons (TRPH)	Total Dissolved Solids (TDS)	Nitrate and Nitrite	Metals	BOD5	COMMENTS
		C_{10}-C_{28}	C_{10}-C_{28}							
		(mg/L)	(mg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)	
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-11	NS	NN	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-11	NS	NN	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-11	NS	NN	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Apr-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Aug-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Aug-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
MW-5	Apr-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-11	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Apr-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Aug-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Nov-12	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Feb-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Aug-13	NS	NS	NS	NS	NS	NS	NS	NS	Insufficient Water
	Nov-13	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	Mar-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
	May-14	NS	NS	NS	NS	NS	NS	NS	NS	Well Dry
MW-6	Apr-10	0.52	<0.10	Below Detection Limit	<5.0	2,300	NA	NA	NA	
	Jun-10	0.48	<0.10	0.62 toluene	<5.0	2,700	NA	NA	NA	
	Sep-10	1.20	<0.050	7.2 toluene	<5.0	2,500	Below Detection Limit	70 barium, 22 zinc	49.2	
	Dec-10	0.31	<0.10	7.4 toluene	7.1	2,500	5.3 nitrate	70 barium	49.5	
	Mar-11	0.34	<0.10	5.9 toluene	<5.0	2,300	Below Detection Limit	72 barium	33.8	
	Jun-11	0.42	<0.10	Below Detection Limit	<5.0	2,500	<0.50	Below Detection Limit	37.4	
	Sep-11	0.42	<0.10	2.0 toluene	<5.0	2,200	Below Detection Limit	51 barium, 23 zinc	34.1	
	Nov-11	0.34	<0.10	Below Detection Limit	<5.0	2,000	Below Detection Limit	56 barium	30.4	
	Feb-12	<0.10	<0.10	<0.50	<5.0	1,600				
	Apr-12	0.40	<0.10	Below Detection Limit	<5.0	2,200	Below Detection Limit	60 barium	36.7	
	Aug-12	0.36	<0.10	Below Detection Limit	<5.0	2,580	Below Detection Limit	64 barium	38.8	
	Nov-12	0.42	<0.10	Below Detection Limit	<5.0	1,400	Below Detection Limit	61 barium	23.2	
	Feb-13	0.36	<0.10	Below Detection Limit	<5.0	2,600	Below Detection Limit	Below Detection Limit	41.6	
	May-13	0.24	<0.10	Below Detection Limit	<5.0	2,500	Below Detection Limit	Below Detection Limit	63.0	
	Aug-13	0.40	<0.10	Below Detection Limit	<5.0	2,500	0.65 nitrate	52 barium	23.0	
	Nov-13	0.36	<0.10	Below Detection Limit	<5.0	2,400	0.61 nitrate	Below Detection Limit	50.7	
	Mar-14	0.42	<0.10	Below Detection Limit	<5.0	2,800	Below Detection Limit	Below Detection Limit	43.1	
	May-14	0.44	<0.10	Below Detection Limit	<5.0	2,600	Below Detection Limit	Below Detection Limit	37.4	
MW-7	Apr-10	0.21	<0.10	0.58 toluene	<5.0	1,100	NA	NA	NA	
	Jun-10	0.29	<0.10	0.86 toluene	<5.0	1,100	NA	NA	NA	
	Sep-10	0.48	<0.050	18 toluene	<5.0	2,000	6.9 nitrate	3.2 arsenic, 40 barium, 5.7 cobalt, 28 zinc	20.7	
	Dec-10	0.25	<0.10	11 toluene	<5.0	2,200	6.0 nitrate	45 barium	35.1	
	Mar-11	0.18	<0.10	6.4 toluene	<5.0	1,400	5.0 nitrate	Below Detection Limit	15.2	

TABLE 5

Historical Groundwater Analytical Data
Freeport-McMoRan Oil & Gas- Inglewood Oil Field
Los Angeles, California

Well ID	Date	TPH-DRO	TPH-DRO (w/Silica Gel Filtering)	BTEX/MtBE	Total Recoverable Petroleum Hydrocarbons (TRPH)	Total Dissolved Solids (TDS)	Nitrate and Nitrite	Metals	BOD5	COMMENTS
		C_{10}-C_{28}	C_{10}-C_{28}							
		(mg/L)	(mg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)	
	Jun-11	0.25	<0.10	Below Detection Limit	<5.0	1,200	7.0 nitrate	Below Detection Limit	22	
	Sep-11	0.35	<0.10	2.7 toluene	<5.0	2,700	5.3 nitrate	48 barium	32.8	
	Nov-11	0.29	<0.10	Below Detection Limit	<5.0	2,500	3.8 nitrate	60 barium	25.6	
	Feb-12	0.29	0.15	Below Detection Limit	<5.0	1,000	5.5 nitrate	26 barium, 2.7 chromium	14.6	
	Apr-12	0.12	<0.10	Below Detection Limit	<5.0	510	Below Detection Limit	3.0 chromium, 5.7 copper	11.8	
	Aug-12	0.15	<0.10	Below Detection Limit	<5.0	1,640	7.15 nitrate	35 barium	22.9	
	Nov-12	0.26	<0.10	Below Detection Limit	<5.0	1,200	5.0 nitrate	3.0 arsenic, 50 Barium	12.7	
	Feb-13	0.16	<0.10	Below Detection Limit	<5.0	1,600	3.7 nitrate	Below Detection Limit	21.5	
	May-13	<0.10	<0.10	Below Detection Limit	<5.0	2,000	6.4 nitrate	Below Detection Limit	37.8	
	Aug-13	0.32	<0.10	Below Detection Limit	<5.0	2,500	7.1 nitrate	33 barium	14.3	
	Nov-13	0.3	<0.10	Below Detection Limit	<5.0	2,200	2.3 nitrate	Below Detection Limit	24.9	
	Mar-14	0.39	<0.10	Below Detection Limit	<5.0	3,200	3.8 nitrate	Below Detection Limit	33.5	
	May-14	0.39	<0.10	Below Detection Limit	<5.0	1,900	7.9 nitrate	Below Detection Limit	35.3	

Notes:
<# indicates compound was not detected above the indicated method reporting limit.
mg/L= milligrams per liter.

APPENDIX

A

MONITORING WELL DATA SHEETS

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-3**	Well Diameter: 2 inch
Total Well Depth (TD): 75.21 ft	Depth to Water (DTW): Dry
Referenced to: PVC	Height of Water Column (feet): NA ft
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: NA	

Purge Method: 2" Grundfos Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
__NA___(Gals.) X __NA___ = ___NA___ Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume Specified Volumes (x3) Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°F)	pH	Cond. (µS)	DO (mg/L)	Turbidity	Gals. Removed	Observations
Well Dry							

Did well Dewater? **NA** Gallons actually evacuated: **NA**

Sample Information	
Sample I.D.: NA	Sample Time: NA
Duplicate: NA	Duplicate ID: NA
Duplicate Time: NA	Laboratory: American Analytics

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation

NOTES:

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-4a**	Well Diameter: 2 inch
Total Well Depth (TD): 120.09 ft	Depth to Water (DTW): 119.87 ft
Referenced to: PVC	Height of Water Column (feet): Dry
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: NA	

Purge Method: Extraction Pump Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
NA (Gals.) X NA = NA Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume Specified Volumes (x3) Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°C)	pH	Cond. (µS)	DO (mg/L)	Turbidity (NTUs)	Gals. Removed	Observations
Well Dry							

Did well Dewater? NA Gallons actually evacuated: NA

Sample Information	
Sample I.D.: NA	Sample Time: NA
Duplicate: NA	Duplicate ID: NA
Duplicate Time: NA	Laboratory: NA

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation

NOTES:

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-4b**	Well Diameter: 2 inch
Total Well Depth (TD): 166.62 ft	Depth to Water (DTW): Dry
Referenced to: PVC	Height of Water Column (feet): NA
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: NA	

Purge Method: Extraction Pump Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
NA (Gals.) X NA = NA Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume Specified Volumes (x3) Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°C)	pH	Cond. (µS)	DO (mg/L)	Turbidity (NTUs)	Gals. Removed	Observations
Well Dry							

Did well Dewater? NA Gallons actually evacuated: NA

Sample Information	
Sample I.D.: NA	Sample Time: NA
Duplicate: NA	Duplicate ID: NA
Duplicate Time: NA	Laboratory: NA

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation

NOTES:

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-4c**	Well Diameter: 2 inch
Total Well Depth (TD): 139.79 ft	Depth to Water (DTW): Dry
Referenced to: PVC	Height of Water Column (feet): NA
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: NA	

Purge Method: Extraction Pump Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
NA (Gals.) X NA = NA Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume Specified Volumes (x3) Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°C)	pH	Cond. (µS)	DO (mg/L)	Turbidity (NTUs)	Gals. Removed	Observations
Well Dry							

Did well Dewater? NA Gallons actually evacuated: NA

Sample Information	
Sample I.D.: NA	Sample Time: NA
Duplicate: NA	Duplicate ID: NA
Duplicate Time: NA	Laboratory: NA

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation

NOTES:

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-5**	Well Diameter: 2 inch
Total Well Depth (TD): 144.4 ft	Depth to Water (DTW): Dry
Referenced to: PVC	Height of Water Column (feet): NA
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: NA	

Purge Method: Extraction Pump Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
NA (Gals.) X NA = NA Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume Specified Volumes (x3) Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°C)	pH	Cond. (µS)	DO (mg/L)	Turbidity (NTUs)	Gals. Removed	Observations
Well Dry							

Did well Dewater? NA Gallons actually evacuated: NA

Sample Information	
Sample I.D.: NA	Sample Time: NA
Duplicate: NA	Duplicate ID: NA
Duplicate Time: NA	Laboratory: NA

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation

NOTES:

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-6**	Well Diameter: 2 inch
Total Well Depth (TD): 73.6 ft	Depth to Water (DTW): 62.25 ft
Referenced to: PVC	Height of Water Column (feet): 11.35 ft
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 64.52 ft	

Purge Method: 2" Grundfos Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
1.9 (Gals.) X 3 = 5.7 Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume / Specified Volumes (x3) / Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°C)	pH	Cond. (µS)	DO (mg/L)	Turbidity (NTUs)	Gals. Removed	Observations
0915	24	6.93	3,132	--	150	2	
0917	26.6	6.87	3,211	--	183	4	
0919	23.7	6.84	3,218	--	158	6	

Did well Dewater? **No** Gallons actually evacuated: **6**

Sample Information

Sample I.D.: MW-6	Sample Time: 9:30
Duplicate: No	Duplicate ID: NA
Duplicate Time: NA	Laboratory: American Analytics

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation
1	Amber Bottle	250 mL				Ice / H2SO4
1	Polyethylene Bottle	500 ml				Ice

NOTES: Samples taken using 0.45 micron filter

Well Monitoring Data Sheet

Project #: Cardno 60861040, ENVIRON 0534271A	Client: Freeport-McMoRan Oil & Gas
Sample Tech: Clint Olesen, Jennifer Dishon	Date: 5/22/2014
Well I.D.: **MW-7**	Well Diameter: 2 inch
Total Well Depth (TD): 58.59 ft	Depth to Water (DTW): 46.14 ft
Referenced to: PVC	Height of Water Column (feet): 12.45 ft
Depth to Free Product: NA	Thickness of Free Product (feet): NA
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 48.63 ft	

Purge Method: 2" Grundfos Sampling Method: Disposable Bailer

Purge Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
	1"	0.04	4"	0.65
1.99 (Gals.) X 3 = 5.97 Gals.	**2"**	**0.16**	6"	1.47
1 Case Volume / Specified Volumes (x3) / Volume to Purge	3"	0.37	Other (__)	radius² * 0.163

Time	Temp (°C)	pH	Cond. (µS)	DO (mg/L)	Turbidity (NTUs)	Gals. Removed	Observations
1221	22.9	6.84	989	-	70	2	
1223	23.3	6.71	1,973	-	52	4	
1225	23.3	6.7	2,950	-	41	6	

Did well Dewater? **No** Gallons actually evacuated: **6**

Sample Information

Sample I.D.: MW-7	Sample Time: 12:35
Duplicate: No	Duplicate ID: NA
Duplicate Time: NA	Laboratory: American Analytics

No. of Containers	Container Type	Volume	Analysis	EPA Method	Time	Preservation
1	Amber Bottle	250 mL				Ice / H2SO4
1	Polyethylene Bottle	500 ml				Ice

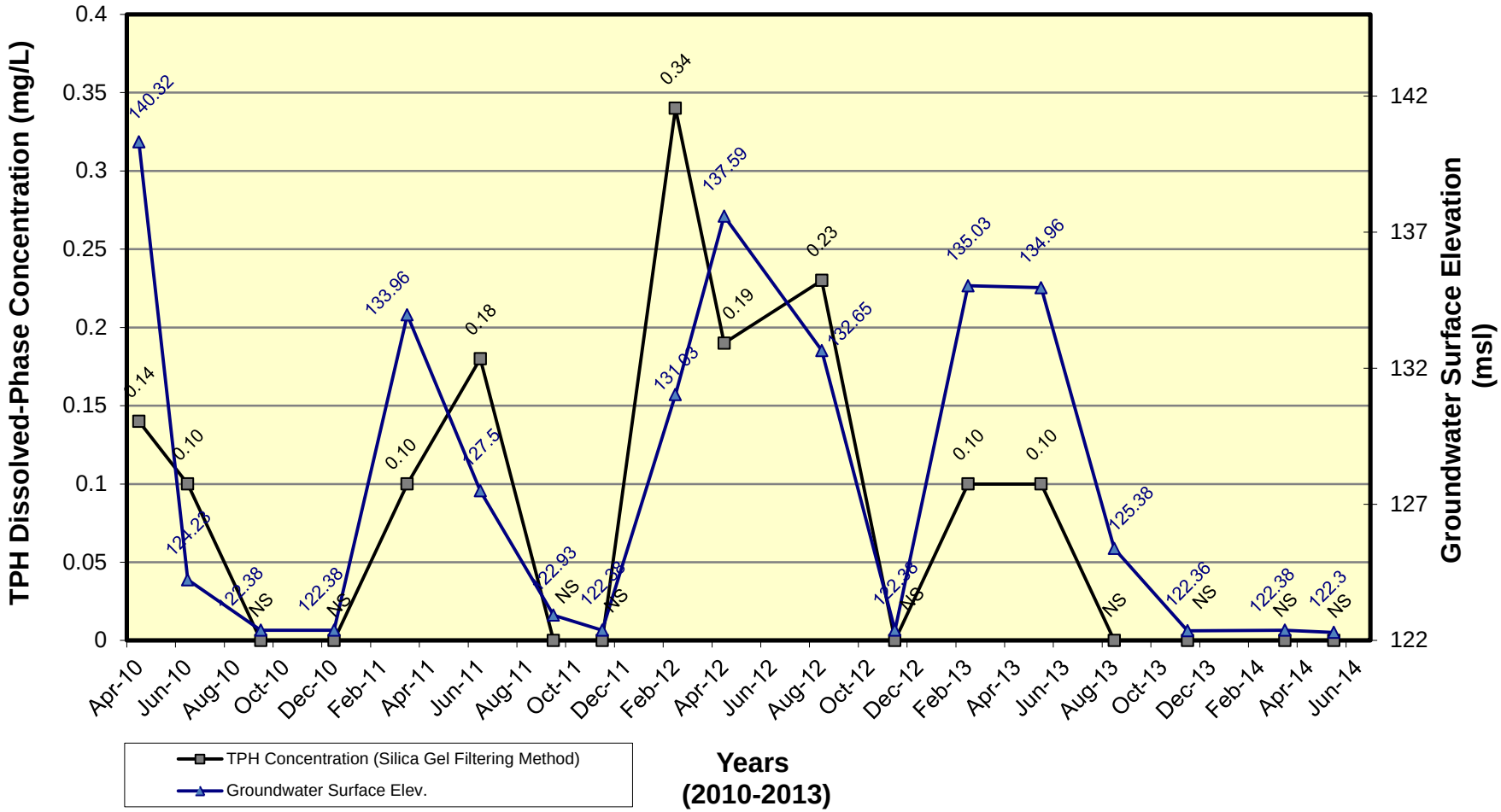
NOTES: Samples taken using 0.45 micron filter

APPENDIX

B

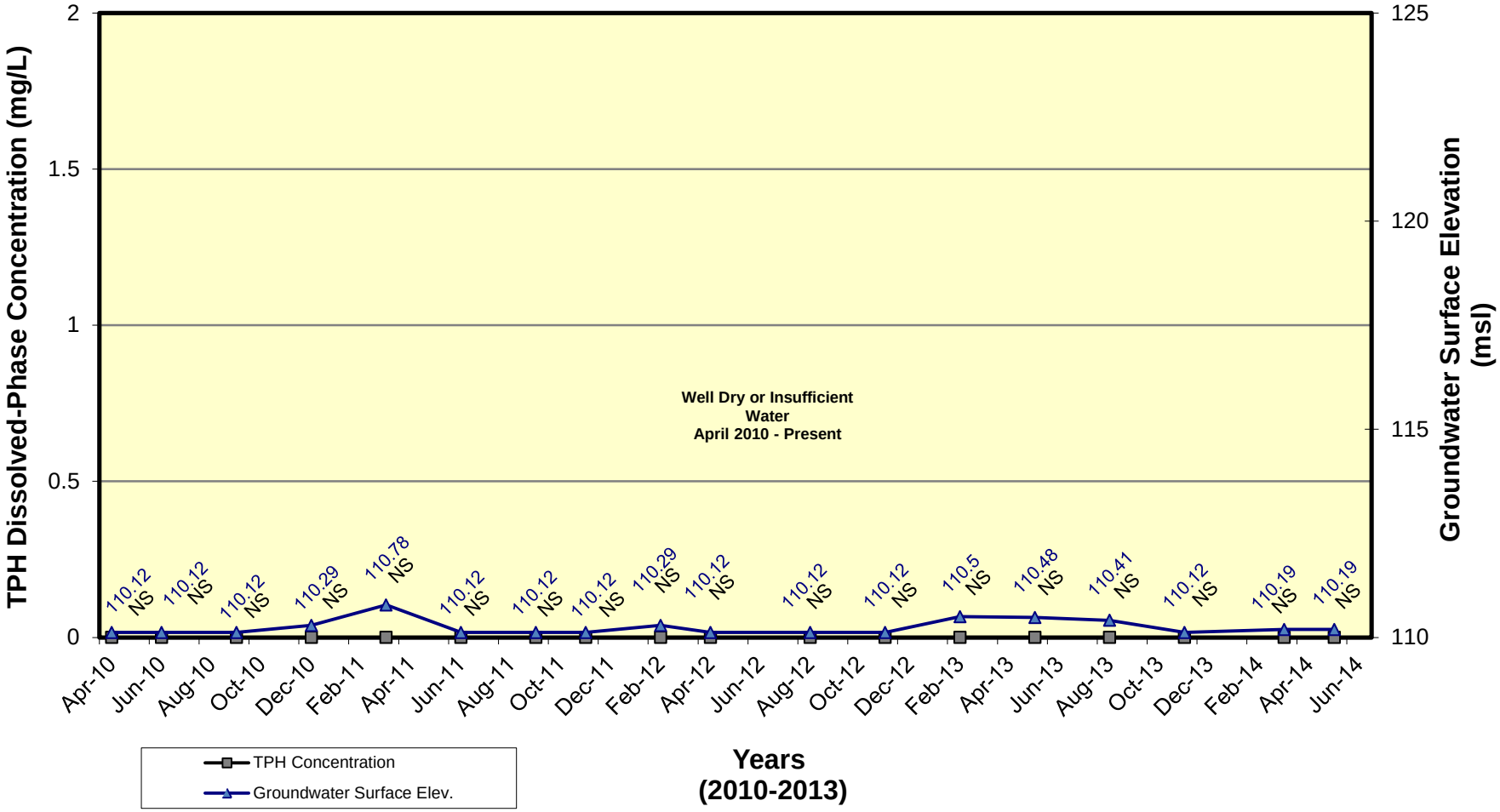
TIME SERIES GRAPHS

TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-3)



NOTE: TPH Detection Limits (0.1 mg/L April 2010 - Present)
TPH Concentration with Silica Gel Cleanup Presented
Well Bottom = 122.38 ft msl
NS = No Sample Collected, Well Dry or Insufficient Water

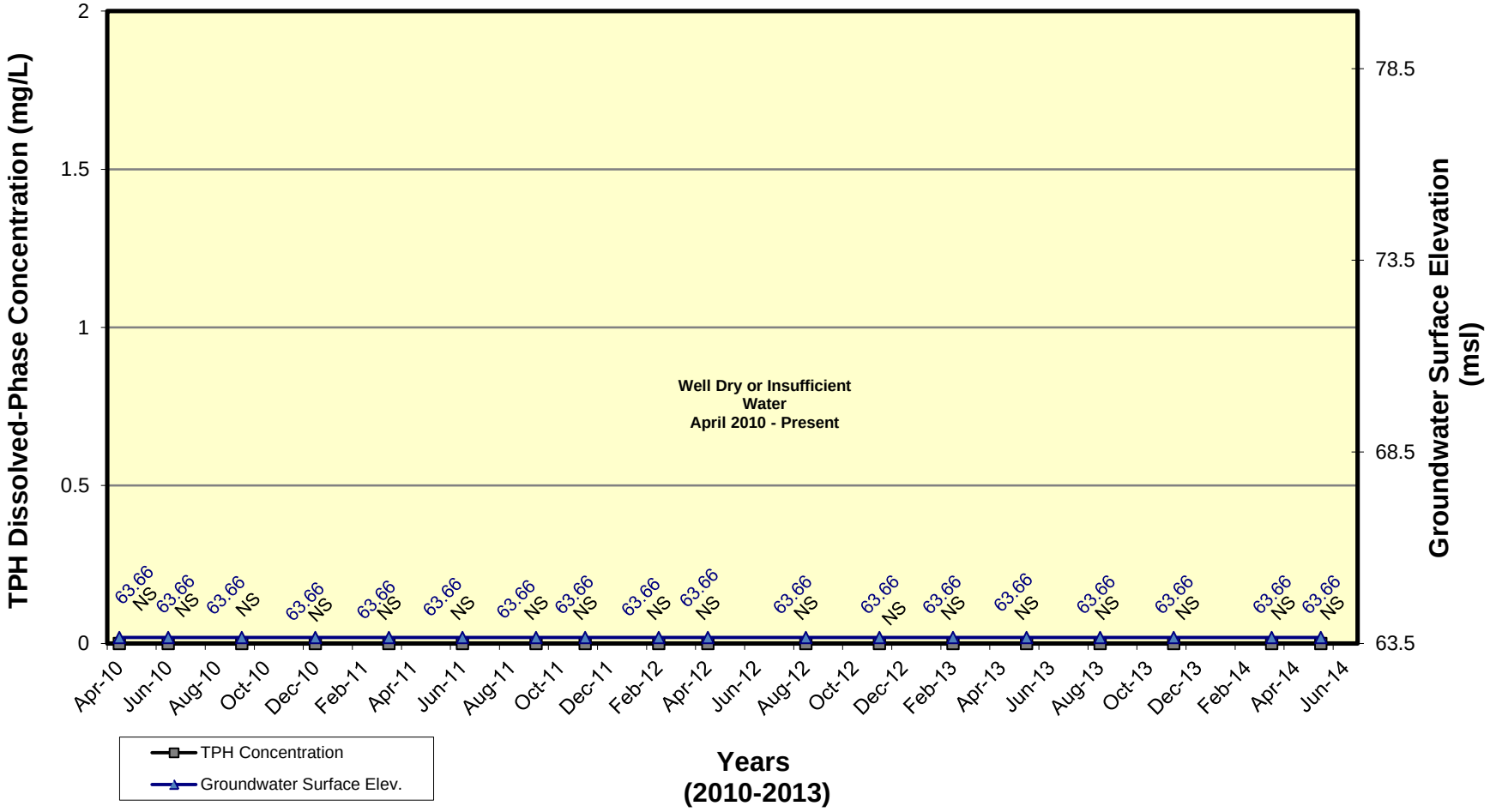
TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-4a)



NOTE: Well Bottom = 110.12 ft msl

NS = No TPH Sample Collected, Well Dry or Insufficient Water

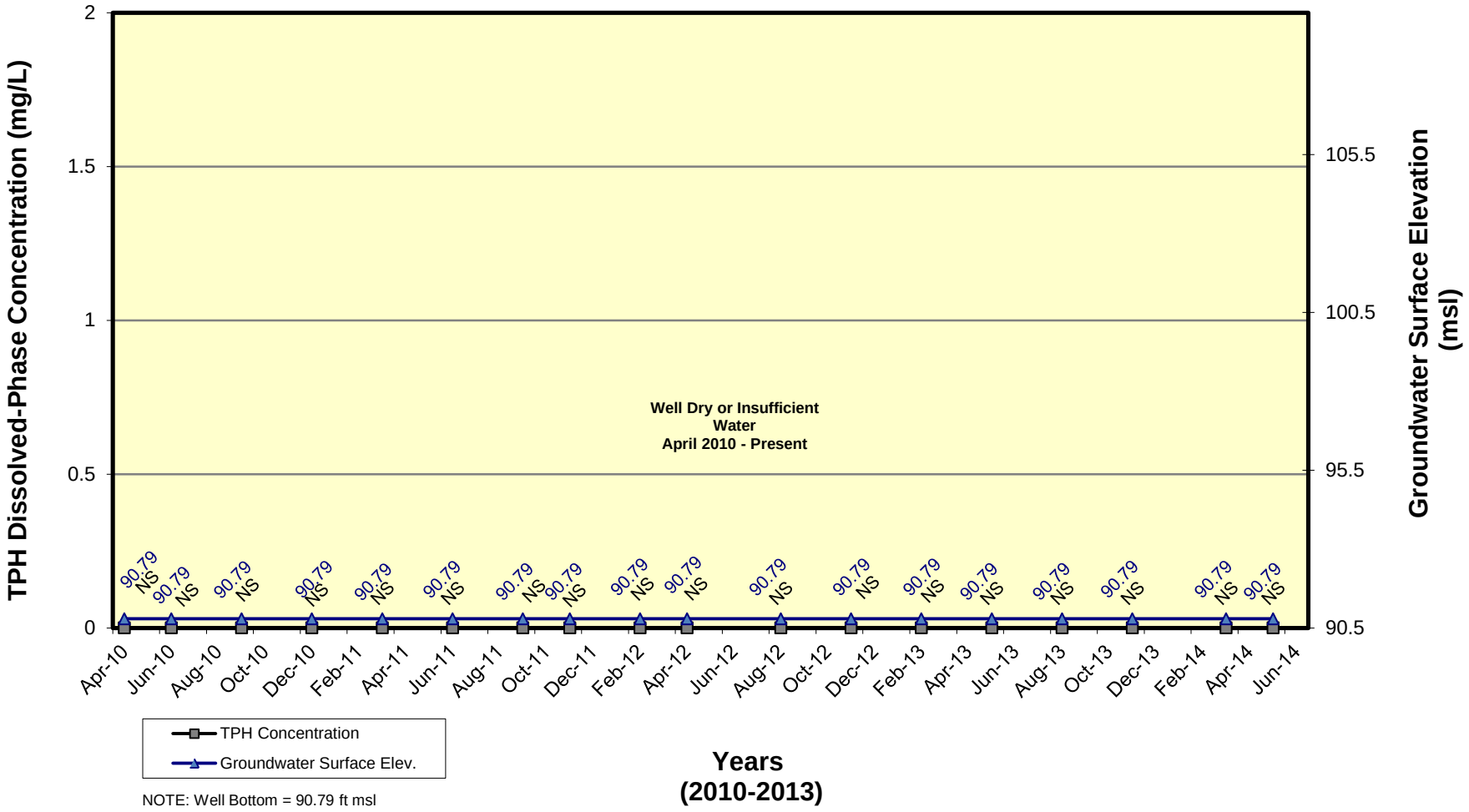
TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-4b)



NOTE: Well Bottom = 63.66 ft msl

NS = No TPH Sample Collected, Well Dry or Insufficient Water

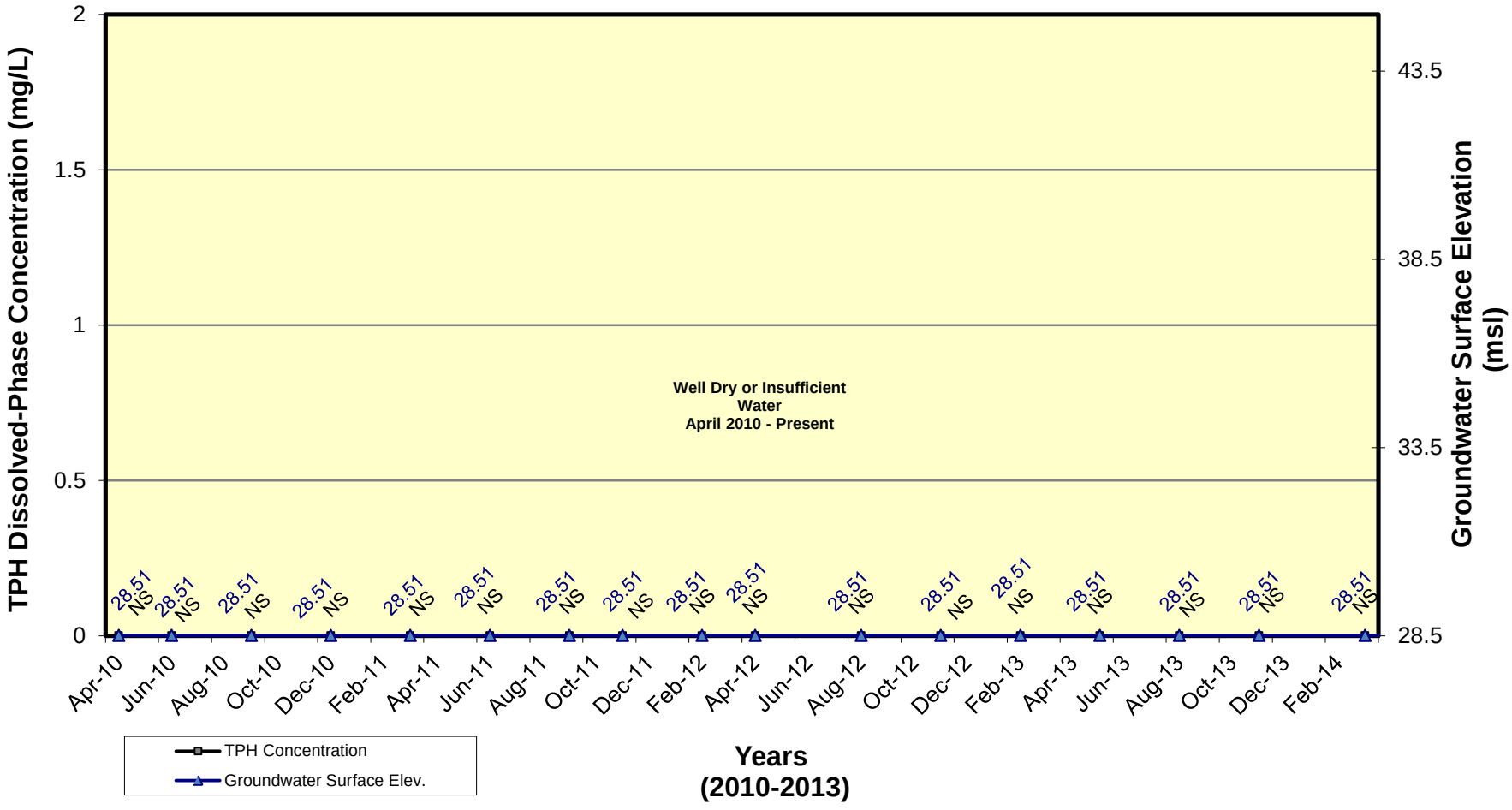
TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-4c)



NOTE: Well Bottom = 90.79 ft msl

NS = No TPH Sample Collected, Well Dry or Insufficient Water

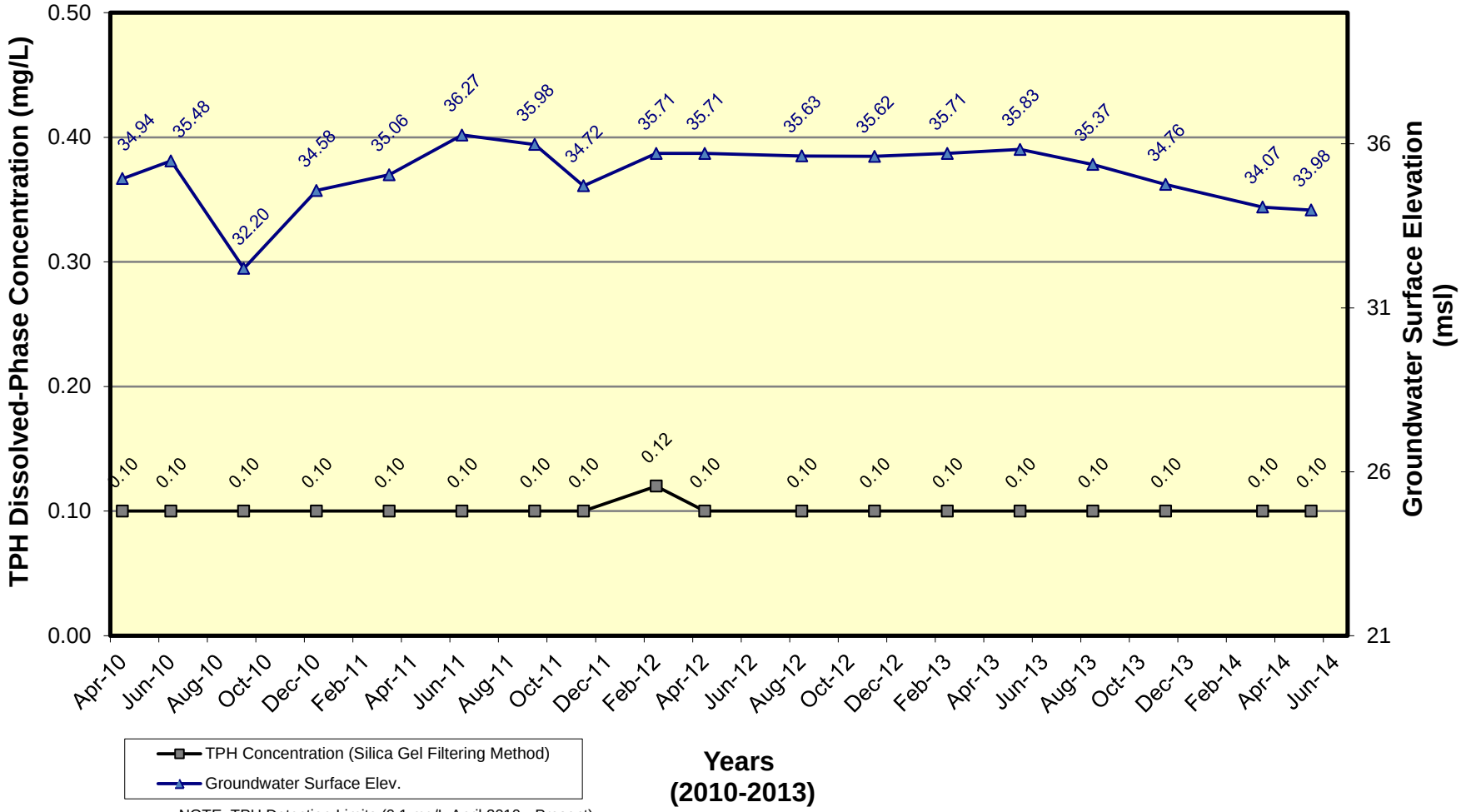
TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-5)



NOTE: Well Bottom = 28.51 ft msl

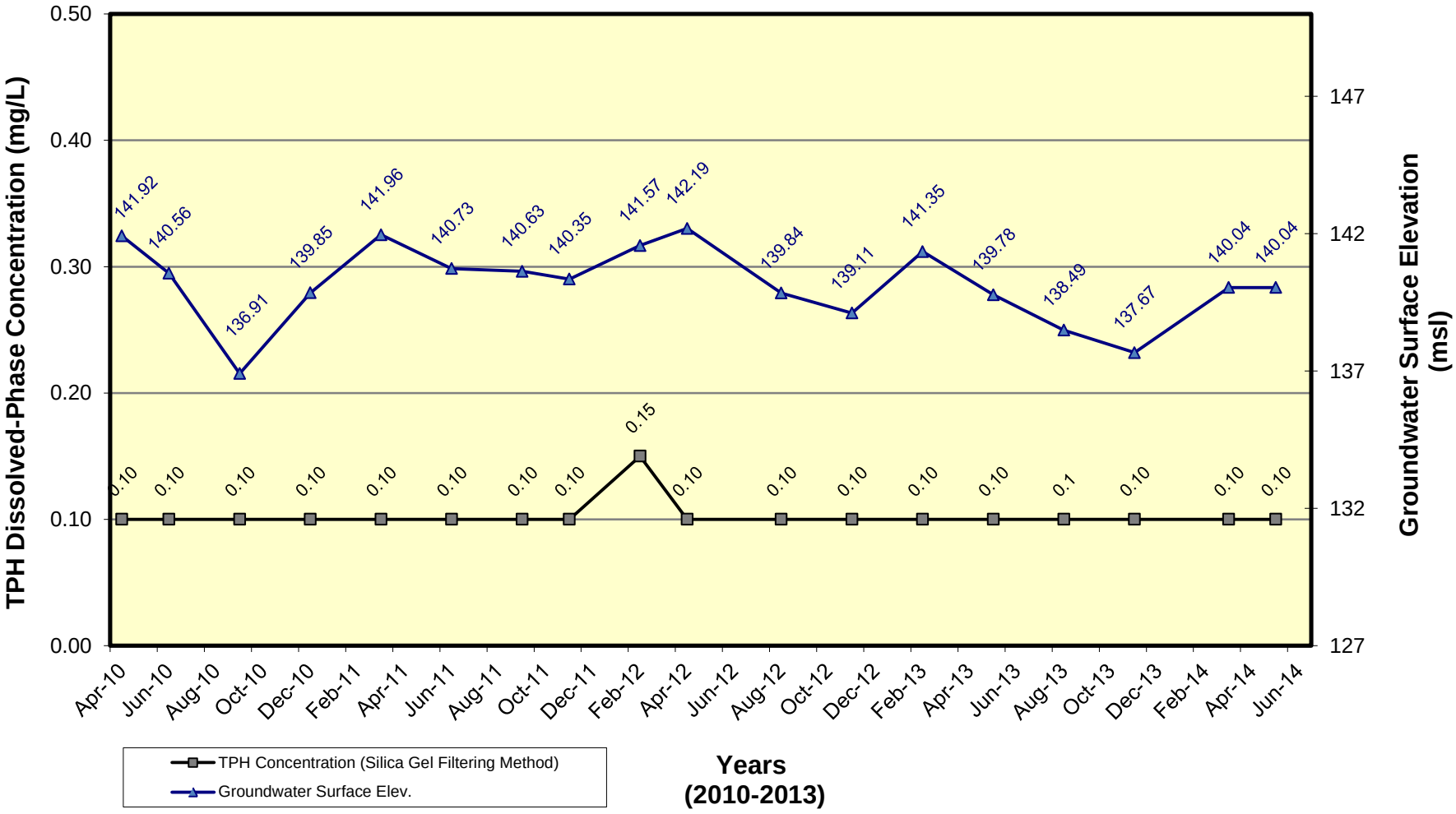
NS = No TPH Sample Collected, Well Dry or Insufficient Water

TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-6)



NOTE: TPH Detection Limits (0.1 mg/L April 2010 - Present)
TPH Concentration with Silica Gel Cleanup Presented
Well Bottom = 21.21 ft msl

TPH Dissolved-Phase Concentrations and Groundwater Surface Elevations
Monitor Well
(MW-7)



NOTE: TPH Detection Limits (0.1 mg/L April 2010 - Present)
TPH Concentration with Silica Gel Cleanup Presented
Well Bottom = 127.04 ft msl

APPENDIX

C

GROUNDWATER SAMPLING LABORATORY ANALYTICAL DATA AND CHAIN-OF-CUSTODY

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 11, 2014

Justin Campbell

Cardno Entrix

12100 Wilshire Blvd. Suite 250

Los Angeles, CA 90025

Re : FM O&G - Inglewood (GW-RWQCB) / 6086104

A783164 / 4E22017

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 05/22/14 16:00 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
8270C					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Ammonia SM4500-NH3					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Carbon Chain Characterization 8015M					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Chloride by Ion Chromatography					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
COD 410.4					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Conductivity SM2510 B					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
EPA 8015M CCC (Silica Gel)					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
GRO/BTEX/MTBE 8015M/8021B					

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Metals Total 6010B					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Nitrate as N by Ion Chromatography					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Nitrite as N by Ion Chromatography					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Ortho-Phosphate by Ion Chromatography					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
pH Measurement 150.1					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
Sulfate by Ion Chromatography					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00
TDS SM2540C					
MW-6	4E22017-01	Water	5	05/22/14 11:00	05/22/14 16:00
MW-7	4E22017-02	Water	5	05/22/14 12:30	05/22/14 16:00

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
MW-8	4E22017-03	Water	5	05/22/14 09:30	05/22/14 16:00
MW-9	4E22017-04	Water	5	05/22/14 14:00	05/22/14 16:00

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Semivolatile Organics by GC/MS

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: ug/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/28/14	05/28/14	05/28/14	05/28/14		
Date Analyzed:	05/28/14	05/28/14	05/28/14	05/28/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
8270C (EPA 8270C)						
3,3´-Dichlorobenzidine	<12	<12	<12	<12	12	20
Acenaphthene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Acenaphthylene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Aniline	<10	<10	<10	<10	10	10
Anthracene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Azobenzene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Benzidine	<17	<17	<17	<17	17	20
Benzo(a)anthracene	<3.0	<3.0	<3.0	<3.0	3.0	20
Benzo(a)pyrene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Benzo(b)fluoranthene	<4.0	<4.0	<4.0	<4.0	4.0	5.0
Benzo(g,h,i)perylene	<5.0	<5.0	<5.0	<5.0	5.0	5.0
Benzoic acid	<5.0	<5.0	<5.0	<5.0	5.0	50
Benzo(k)fluoranthene	<5.0	<5.0	<5.0	<5.0	5.0	5.0
Benzyl alcohol	<7.0	<7.0	<7.0	<7.0	7.0	10
4-Bromophenyl phenyl ether	<4.0	<4.0	<4.0	<4.0	4.0	5.0
Butyl benzyl phthalate	<6.0	<6.0	<6.0	<6.0	6.0	10
4-Chloro-3-methylphenol	<8.0	<8.0	<8.0	<8.0	8.0	10
4-Chloroaniline	<7.0	<7.0	<7.0	<7.0	7.0	20
Bis(2-chloroethoxy)methane	<5.0	<5.0	<5.0	<5.0	5.0	5.0
Bis(2-chloroethyl)ether	<4.0	<4.0	<4.0	<4.0	4.0	5.0
Bis(2-chloroisopropyl)ether	<5.0	<5.0	<5.0	<5.0	5.0	5.0
2-Chloronaphthalene	<5.0	<5.0	<5.0	<5.0	5.0	5.0
2-Chlorophenol	<5.0	<5.0	<5.0	<5.0	5.0	5.0
4-Chlorophenyl phenyl ether	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Chrysene	<4.0	<4.0	<4.0	<4.0	4.0	5.0
Dibenzo(a,h)anthracene	<5.0	<5.0	<5.0	<5.0	5.0	5.0
Dibenzofuran	<3.0	<3.0	<3.0	<3.0	3.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Semivolatile Organics by GC/MS

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: ug/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/28/14	05/28/14	05/28/14	05/28/14		
Date Analyzed:	05/28/14	05/28/14	05/28/14	05/28/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
8270C (EPA 8270C) (continued)						
Di-n-butyl phthalate	<5.0	<5.0	<5.0	<5.0	5.0	100
1,2-Dichlorobenzene	<2.0	<2.0	<2.0	<2.0	2.0	5.0
1,3-Dichlorobenzene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
1,4-Dichlorobenzene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
2,4-Dichlorophenol	<5.0	<5.0	<5.0	<5.0	5.0	5.0
Diethyl phthalate	<3.0	<3.0	<3.0	<3.0	3.0	40
2,4-Dimethylphenol	<6.0	<6.0	<6.0	<6.0	6.0	20
Dimethyl phthalate	<3.0	<3.0	<3.0	<3.0	3.0	10
4,6-Dinitro-2-methylphenol	<17	<17	<17	<17	17	20
2,4-Dinitrophenol	<10	<10	<10	<10	10	20
2,6-Dinitrotoluene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
2,4-Dinitrotoluene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Di-n-octyl phthalate	<7.0	<7.0	<7.0	<7.0	7.0	10
1,2-Diphenylhydrazine	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Bis(2-ethylhexyl)phthalate	<19	<19	<19	<19	19	50
Fluoranthene	<4.0	<4.0	<4.0	<4.0	4.0	5.0
Fluorene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Hexachlorobenzene	<7.0	<7.0	<7.0	<7.0	7.0	10
Hexachlorobutadiene	<8.0	<8.0	<8.0	<8.0	8.0	10
Hexachlorocyclopentadiene	<6.0	<6.0	<6.0	<6.0	6.0	10
Hexachloroethane	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Indeno (1,2,3-cd) pyrene	<5.0	<5.0	<5.0	<5.0	5.0	20
Isophorone	<4.0	<4.0	<4.0	<4.0	4.0	5.0
2-Methylnaphthalene	<5.0	<5.0	<5.0	<5.0	5.0	5.0
2-Methylphenol	<4.0	<4.0	<4.0	<4.0	4.0	10
3-Methylphenol	<4.0	<4.0	<4.0	<4.0	4.0	10
4-Methylphenol	<4.0	<4.0	<4.0	<4.0	4.0	10

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Semivolatile Organics by GC/MS

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: ug/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/28/14	05/28/14	05/28/14	05/28/14		
Date Analyzed:	05/28/14	05/28/14	05/28/14	05/28/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
8270C (EPA 8270C) (continued)						
Naphthalene	<4.0	<4.0	<4.0	<4.0	4.0	5.0
4-Nitroaniline	<5.0	<5.0	<5.0	<5.0	5.0	20
3-Nitroaniline	<10	<10	<10	<10	10	20
2-Nitroaniline	<4.0	<4.0	<4.0	<4.0	4.0	20
Nitrobenzene	<5.0	<5.0	<5.0	<5.0	5.0	5.0
2-Nitrophenol	<6.0	<6.0	<6.0	<6.0	6.0	10
4-Nitrophenol	<5.0	<5.0	<5.0	<5.0	5.0	10
N-Nitrosodimethylamine	<3.0	<3.0	<3.0	<3.0	3.0	5.0
N-Nitrosodiphenylamine	<4.0	<4.0	<4.0	<4.0	4.0	5.0
N-Nitrosodi-n-propylamine	<6.0	<6.0	<6.0	<6.0	6.0	10
Pentachlorophenol	<17	<17	<17	<17	17	20
Phenanthrene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Phenol	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Pyrene	<3.0	<3.0	<3.0	<3.0	3.0	5.0
1,2,4-Trichlorobenzene	<4.0	<4.0	<4.0	<4.0	4.0	10
2,4,5-Trichlorophenol	<6.0	<6.0	<6.0	<6.0	6.0	10
2,4,6-Trichlorophenol	<8.0	<8.0	<8.0	<8.0	8.0	10
Surrogates						**%REC Limits**
2-Fluorobiphenyl	44%	41% [1]	41% [1]	35% [1]		43-116
2-Fluorophenol	25%	16% [1]	18% [1]	11% [1]		21-100
Nitrobenzene-d5	46%	39%	43%	39%		35-134
Phenol-d6	13%	8.3% [1]	12%	8.5% [1]		10-94
Terphenyl-dl4	44%	37%	46%	41%		33-141
2,4,6-Tribromophenol	31%	28%	33%	18%		10-123

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Anions by Ion Chromatography

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Chloride by Ion Chromatography (EPA 300.0)								
4E22017-01	MW-6	05/22/14	06/02/14	06/02/14	200	**610**	mg/L	0.5
4E22017-02	MW-7	05/22/14	06/02/14	06/02/14	100	**510**	mg/L	0.5
4E22017-03	MW-8	05/22/14	06/02/14	06/02/14	200	**1000**	mg/L	0.5
4E22017-04	MW-9	05/22/14	05/30/14	06/02/14	10	**110**	mg/L	0.5
Nitrate as N by Ion Chromatography (EPA 300.0)								
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	5	<0.25	mg/L	0.1
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	1	**7.9**	mg/L	0.1
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	1	<0.050	mg/L	0.1
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	1	<0.050	mg/L	0.1
Nitrite as N by Ion Chromatography (EPA 300.0)								
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	50	<12	mg/L	0.3
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	20	<5.0	mg/L	0.3
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	20	<5.0	mg/L	0.3
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	5	<1.2	mg/L	0.3
Ortho-Phosphate by Ion Chromatography (EPA 300.0)								
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	5	<0.35	mg/L	0.5
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	5	<0.35	mg/L	0.5
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	5	<0.35	mg/L	0.5
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	1	<0.070	mg/L	0.5
Sulfate by Ion Chromatography (EPA 300.0)								
4E22017-01	MW-6	05/22/14	05/30/14	05/30/14	50	**220**	mg/L	0.5
4E22017-02	MW-7	05/22/14	05/30/14	05/30/14	50	**280**	mg/L	0.5
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	1	**0.59**	mg/L	0.5
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	20	**88**	mg/L	0.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Anions by Ion Chromatography

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MDL	MRL
Chloride by Ion Chromatography (EPA 300.0)									
4E22017-01	MW-6	05/22/14	06/02/14	06/02/14	200	**610**	mg/L	0.344	0.5
4E22017-02	MW-7	05/22/14	06/02/14	06/02/14	100	**510**	mg/L	0.344	0.5
4E22017-03	MW-8	05/22/14	06/02/14	06/02/14	200	**1000**	mg/L	0.344	0.5
4E22017-04	MW-9	05/22/14	05/30/14	06/02/14	10	**110**	mg/L	0.344	0.5
Nitrate as N by Ion Chromatography (EPA 300.0)									
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	5	<0.25	mg/L	0.05	0.1
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	1	**7.9**	mg/L	0.05	0.1
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	1	<0.050	mg/L	0.05	0.1
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	1	<0.050	mg/L	0.05	0.1
Nitrite as N by Ion Chromatography (EPA 300.0)									
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	50	<12	mg/L	0.25	0.3
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	20	<5.0	mg/L	0.25	0.3
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	20	<5.0	mg/L	0.25	0.3
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	5	<1.2	mg/L	0.25	0.3
Ortho-Phosphate by Ion Chromatography (EPA 300.0)									
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	5	<0.35	mg/L	0.07	0.5
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	5	<0.35	mg/L	0.07	0.5
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	5	<0.35	mg/L	0.07	0.5
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	1	<0.070	mg/L	0.07	0.5
Sulfate by Ion Chromatography (EPA 300.0)									
4E22017-01	MW-6	05/22/14	05/30/14	05/30/14	50	**220**	mg/L	0.277	0.5
4E22017-02	MW-7	05/22/14	05/30/14	05/30/14	50	**280**	mg/L	0.277	0.5
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	1	**0.59**	mg/L	0.277	0.5
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	20	**88**	mg/L	0.277	0.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: General Chemistry Analyses

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MDL	MRL
Ammonia SM4500-NH3 (SM4500-NH3 D)									
4E22017-01	MW-6	05/22/14	05/22/14	05/22/14	1	<0.031	mg/L	0.031	0.1
4E22017-02	MW-7	05/22/14	05/22/14	05/22/14	1	<0.031	mg/L	0.031	0.1
4E22017-03	MW-8	05/22/14	05/22/14	05/22/14	1	<0.031	mg/L	0.031	0.1
4E22017-04	MW-9	05/22/14	05/22/14	05/22/14	1	<0.031	mg/L	0.031	0.1
COD 410.4 (EPA 410.4)									
4E22017-01	MW-6	05/22/14	05/29/14	05/29/14	1	**45**	mg/L	7	10
4E22017-02	MW-7	05/22/14	05/29/14	05/29/14	1	**39**	mg/L	7	10
4E22017-03	MW-8	05/22/14	05/29/14	05/29/14	1	**28**	mg/L	7	10
4E22017-04	MW-9	05/22/14	05/29/14	05/29/14	1	**22**	mg/L	7	10
Conductivity SM2510 B (SM2510 B)									
4E22017-01	MW-6	05/22/14	05/22/14	05/22/14	1	**3600**	umhos/cm	10	10
4E22017-02	MW-7	05/22/14	05/22/14	05/22/14	1	**2700**	umhos/cm	10	10
4E22017-03	MW-8	05/22/14	05/22/14	05/22/14	1	**2600**	umhos/cm	10	10
4E22017-04	MW-9	05/22/14	05/22/14	05/22/14	1	**730**	umhos/cm	10	10
pH Measurement 150.1 (EPA 150.1)									
4E22017-01	MW-6	05/22/14	05/23/14	05/23/14	1	**7.0**	pH Units	0.01	0.01
4E22017-02	MW-7	05/22/14	05/23/14	05/23/14	1	**6.7**	pH Units	0.01	0.01
4E22017-03	MW-8	05/22/14	05/23/14	05/23/14	1	**6.8**	pH Units	0.01	0.01
4E22017-04	MW-9	05/22/14	05/23/14	05/23/14	1	**6.7**	pH Units	0.01	0.01

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: General Chemistry Analyses

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MDL	MRL
TDS SM2540C (SM2540C)									
4E22017-01	MW-6	05/22/14	05/28/14	05/28/14	10	**2600**	mg/L	6.2	10
4E22017-02	MW-7	05/22/14	05/28/14	05/28/14	5	**1900**	mg/L	6.2	10
4E22017-03	MW-8	05/22/14	05/28/14	05/28/14	5	**1900**	mg/L	6.2	10
4E22017-04	MW-9	05/22/14	05/28/14	05/28/14	2	**610**	mg/L	6.2	10

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: GROBTEXMTBE 8015M/8021B by GC

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: ug/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/29/14	05/29/14	05/29/14	05/29/14		
Date Analyzed:	05/29/14	05/29/14	05/29/14	05/29/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
GRO/BTEX/MTBE 8015M/8021B (VOCs by GC/FID/PID)						
Benzene	<0.40	<0.40	<0.40	<0.40	0.40	0.50
Ethylbenzene	<0.50	<0.50	<0.50	<0.50	0.50	0.50
Gasoline Range Organics (GRO)	<17	<17	<17	<17	17	100
Methyl-tert-Butyl Ether (MTBE)	<3.0	<3.0	<3.0	<3.0	3.0	5.0
Toluene	<0.40	<0.40	<0.40	<0.40	0.40	0.50
Xylenes, Total	<0.80	<0.80	<0.80	<0.80	0.80	1.0
Surrogates					**%REC Limits**	
a,a,a-Trifluorotoluene	106%	103%	108%	104%	80-120	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Carbon Chain by GC/FID

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: mg/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/27/14	05/27/14	05/27/14	05/27/14		
Date Analyzed:	05/27/14	05/27/14	05/27/14	05/27/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
Carbon Chain Characterization 8015M (EPA 8015M)						
C6-C8	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C8-C10	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C10-C12	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C12-C14	**0.027**	**0.038**	<0.010	**0.020**	0.010	0.010
C14-C16	**0.046**	**0.060**	**0.010**	**0.026**	0.010	0.010
C16-C18	**0.060**	**0.064**	<0.010	**0.029**	0.010	0.010
C18-C20	**0.058**	**0.064**	**0.012**	**0.055**	0.010	0.010
C20-C22	**0.089**	**0.052**	<0.010	**0.054**	0.010	0.010
C22-C24	**0.050**	**0.031**	<0.010	**0.036**	0.010	0.010
C24-C26	**0.047**	**0.033**	<0.010	**0.028**	0.010	0.010
C26-C28	**0.029**	**0.015**	<0.010	**0.029**	0.010	0.010
C28-C32	**0.016**	**0.011**	<0.010	**0.024**	0.010	0.010
C32-C34	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C34-C36	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C36-C40	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C40-C44	<0.010	<0.010	<0.010	<0.010	0.010	0.010
TPH (C6-C44)	**0.42**	**0.37**	<0.10	**0.30**	0.10	0.10
Diesel Range Organics (C13-C22)	**0.27**	**0.26**	<0.10	**0.17**	0.10	0.10
Gasoline Range Organics (C6-C12)	<0.10	<0.10	<0.10	<0.10	0.10	0.10
Oil Range Organics (C23-C44)	**0.12**	<0.10	<0.10	**0.10**	0.10	0.10
Surrogates					**%REC Limits**	
o-Terphenyl	137%	150%	145%	143%	50-150	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Carbon Chain by GC/FID Silica Gel Cleanup

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: mg/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/29/14	05/29/14	05/29/14	05/29/14		
Date Analyzed:	05/30/14	05/30/14	05/30/14	05/30/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
EPA 8015M CCC (Silica Gel) (EPA 8015M)						
C6-C8	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C8-C10	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C10-C12	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C12-C14	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C14-C16	<0.010	**0.016**	<0.010	<0.010	0.010	0.010
C16-C18	**0.013**	**0.015**	<0.010	<0.010	0.010	0.010
C18-C20	**0.015**	<0.010	<0.010	<0.010	0.010	0.010
C20-C22	**0.010**	**0.011**	<0.010	<0.010	0.010	0.010
C22-C24	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C24-C26	**0.014**	**0.012**	**0.017**	<0.010	0.010	0.010
C26-C28	<0.010	<0.010	<0.010	**0.012**	0.010	0.010
C28-C32	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C32-C34	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C34-C36	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C36-C40	<0.010	<0.010	<0.010	<0.010	0.010	0.010
C40-C44	<0.010	<0.010	<0.010	<0.010	0.010	0.010
TPH (C6-C44)	<0.10	<0.10	<0.10	<0.10	0.10	0.10
Diesel Range Organics (C13-C22)	<0.10	<0.10	<0.10	<0.10	0.10	0.10
Gasoline Range Organics (C6-C12)	<0.10	<0.10	<0.10	<0.10	0.10	0.10
Oil Range Organics (C23-C44)	<0.10	<0.10	<0.10	<0.10	0.10	0.10
Surrogates					**%REC Limits**	
o-Terphenyl	114%	144%	143%	139%	50-150	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)
Method: Total Metals by EPA 6010B

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14
Units: ug/L

Date Sampled:	05/22/14	05/22/14	05/22/14	05/22/14		
Date Prepared:	05/28/14	05/28/14	05/28/14	05/28/14		
Date Analyzed:	05/28/14	05/28/14	05/28/14	05/28/14		
AA ID No:	4E22017-01	4E22017-02	4E22017-03	4E22017-04		
Client ID No:	MW-6	MW-7	MW-8	MW-9		
Matrix:	Water	Water	Water	Water		
Dilution Factor:	1	1	1	1	MDL	MRL
Metals Total 6010B (EPA 6010B)						
Arsenic	<6.0	<6.0	<6.0	**60**	6.0	7.0
Barium	<5.0	<5.0	**150**	<5.0	5.0	100
Boron	**4100**	**840**	<50	**420**	50	200
Chromium	<9.0	<9.0	<9.0	<9.0	9.0	10
Cobalt	<5.0	<5.0	<5.0	<5.0	5.0	50
Copper	<10	<10	<10	<10	10	25
Lead	<5.0	<5.0	<5.0	<5.0	5.0	10
Sodium	**700000**	**300000**	**170000**	**63000**	100	500
Zinc	<10	<10	<10	<10	10	50

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B4E2810 - EPA 3510C_MS										
Blank (B4E2810-BLK1)				Prepared & Analyzed: 05/28/14						
3,3´-Dichlorobenzidine	<12	12	ug/L							
Acenaphthene	<3.0	3.0	ug/L							
Acenaphthylene	<3.0	3.0	ug/L							
Aniline	<10	10	ug/L							
Anthracene	<3.0	3.0	ug/L							
Azobenzene	<3.0	3.0	ug/L							
Benzidine	<17	17	ug/L							
Benzo(a)anthracene	<3.0	3.0	ug/L							
Benzo(a)pyrene	<3.0	3.0	ug/L							
Benzo(b)fluoranthene	<4.0	4.0	ug/L							
Benzo(g,h,i)perylene	<5.0	5.0	ug/L							
Benzoic acid	<5.0	5.0	ug/L							
Benzo(k)fluoranthene	<5.0	5.0	ug/L							
Benzyl alcohol	<7.0	7.0	ug/L							
4-Bromophenyl phenyl ether	<4.0	4.0	ug/L							
Butyl benzyl phthalate	<6.0	6.0	ug/L							
4-Chloro-3-methylphenol	<8.0	8.0	ug/L							
4-Chloroaniline	<7.0	7.0	ug/L							
Bis(2-chloroethoxy)methane	<5.0	5.0	ug/L							
Bis(2-chloroethyl)ether	<4.0	4.0	ug/L							
Bis(2-chloroisopropyl)ether	<5.0	5.0	ug/L							
2-Chloronaphthalene	<5.0	5.0	ug/L							
2-Chlorophenol	<5.0	5.0	ug/L							
4-Chlorophenyl phenyl ether	<3.0	3.0	ug/L							
Chrysene	<4.0	4.0	ug/L							
Dibenzo(a,h)anthracene	<5.0	5.0	ug/L							
Dibenzofuran	<3.0	3.0	ug/L							
Di-n-butyl phthalate	<5.0	5.0	ug/L							
1,2-Dichlorobenzene	<2.0	2.0	ug/L							
1,3-Dichlorobenzene	<3.0	3.0	ug/L							
1,4-Dichlorobenzene	<3.0	3.0	ug/L							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B4E2810 - EPA 3510C_MS										
Blank (B4E2810-BLK1) Continued				Prepared & Analyzed: 05/28/14						
2,4-Dichlorophenol	<5.0	5.0	ug/L							
Diethyl phthalate	<3.0	3.0	ug/L							
2,4-Dimethylphenol	<6.0	6.0	ug/L							
Dimethyl phthalate	<3.0	3.0	ug/L							
4,6-Dinitro-2-methylphenol	<17	17	ug/L							
2,4-Dinitrophenol	<10	10	ug/L							
2,6-Dinitrotoluene	<3.0	3.0	ug/L							
2,4-Dinitrotoluene	<3.0	3.0	ug/L							
Di-n-octyl phthalate	<7.0	7.0	ug/L							
1,2-Diphenylhydrazine	<3.0	3.0	ug/L							
Bis(2-ethylhexyl)phthalate	<19	19	ug/L							
Fluoranthene	<4.0	4.0	ug/L							
Fluorene	<3.0	3.0	ug/L							
Hexachlorobenzene	<7.0	7.0	ug/L							
Hexachlorobutadiene	<8.0	8.0	ug/L							
Hexachlorocyclopentadiene	<6.0	6.0	ug/L							
Hexachloroethane	<3.0	3.0	ug/L							
Indeno (1,2,3-cd) pyrene	<5.0	5.0	ug/L							
Isophorone	<4.0	4.0	ug/L							
2-Methylnaphthalene	<5.0	5.0	ug/L							
2-Methylphenol	<4.0	4.0	ug/L							
3-Methylphenol	<4.0	4.0	ug/L							
4-Methylphenol	<4.0	4.0	ug/L							
Naphthalene	<4.0	4.0	ug/L							
4-Nitroaniline	<5.0	5.0	ug/L							
3-Nitroaniline	<10	10	ug/L							
2-Nitroaniline	<4.0	4.0	ug/L							
Nitrobenzene	<5.0	5.0	ug/L							
2-Nitrophenol	<6.0	6.0	ug/L							
4-Nitrophenol	<5.0	5.0	ug/L							
N-Nitrosodimethylamine	<3.0	3.0	ug/L							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B4E2810 - EPA 3510C_MS										
Blank (B4E2810-BLK1) Continued				Prepared & Analyzed: 05/28/14						
N-Nitrosodiphenylamine	<4.0	4.0	ug/L							
N-Nitrosodi-n-propylamine	<6.0	6.0	ug/L							
Pentachlorophenol	<17	17	ug/L							
Phenanthrene	<3.0	3.0	ug/L							
Phenol	<3.0	3.0	ug/L							
Pyrene	<3.0	3.0	ug/L							
1,2,4-Trichlorobenzene	<4.0	4.0	ug/L							
2,4,5-Trichlorophenol	<6.0	6.0	ug/L							
2,4,6-Trichlorophenol	<8.0	8.0	ug/L							
Surrogate: 2-Fluorobiphenyl	*19.0*		*ug/L*	*25*		*75.9*	*43-116*			
Surrogate: 2-Fluorophenol	*21.8*		*ug/L*	*50*		*43.6*	*21-100*			
Surrogate: Nitrobenzene-d5	*23.5*		*ug/L*	*25*		*94.0*	*35-134*			
Surrogate: Phenol-d6	*10.2*		*ug/L*	*50*		*20.3*	*10-94*			
Surrogate: Terphenyl-dl4	*20.1*		*ug/L*	*25*		*80.4*	*33-141*			
Surrogate: 2,4,6-Tribromophenol	*21.1*		*ug/L*	*50*		*42.2*	*10-123*			
LCS (B4E2810-BS1)				Prepared & Analyzed: 05/28/14						
Acenaphthene	**27.1**	3.0	ug/L	30		90.3	20-93			
Anthracene	**29.0**	3.0	ug/L	30		96.6	41-121			
Benzo(a)pyrene	**27.8**	3.0	ug/L	30		92.5	17-163			
Benzo(b)fluoranthene	**28.1**	4.0	ug/L	30		93.7	33-137			
Butyl benzyl phthalate	**32.1**	6.0	ug/L	30		107	19-139			
4-Chloro-3-methylphenol	**21.2**	8.0	ug/L	30		70.8	22-147			
Bis(2-chloroethyl)ether	**27.7**	4.0	ug/L	30		92.3	26-122			
2-Chloronaphthalene	**23.8**	5.0	ug/L	30		79.2	15-105			
4-Chlorophenyl phenyl ether	**22.1**	3.0	ug/L	30		73.6	41-128			
1,4-Dichlorobenzene	**18.6**	3.0	ug/L	30		62.1	26-105			
2,4-Dichlorophenol	**16.4**	5.0	ug/L	30		54.5	15-110			
Di-n-octyl phthalate	**31.7**	7.0	ug/L	30		106	4-146			
Bis(2-ethylhexyl)phthalate	**33.6**	19	ug/L	30		112	20-210			J
Fluoranthene	**26.0**	4.0	ug/L	30		86.7	47-125			
Fluorene	**18.8**	3.0	ug/L	30		62.7	27-93			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B4E2810 - EPA 3510C_MS										
LCS (B4E2810-BS1) Continued				Prepared & Analyzed: 05/28/14						
Hexachlorobenzene	**30.2**	7.0	ug/L	30		101	2-152			
Hexachlorobutadiene	**17.3**	8.0	ug/L	30		57.6	24-116			
Hexachloroethane	**18.0**	3.0	ug/L	30		59.9	11-97			
Isophorone	**29.0**	4.0	ug/L	30		96.6	21-196			
Naphthalene	**23.4**	4.0	ug/L	30		78.1	25-121			
Nitrobenzene	**26.8**	5.0	ug/L	30		89.3	38-133			
2-Nitrophenol	**20.2**	6.0	ug/L	30		67.2	2-163			
N-Nitrosodi-n-propylamine	**27.8**	6.0	ug/L	30		92.6	2-230			
Pentachlorophenol	**ND**	17	ug/L	30			14-176			
Phenol	**9.70**	3.0	ug/L	30		32.3	5-112			
Pyrene	**31.4**	3.0	ug/L	30		105	13-111			
1,2,4-Trichlorobenzene	**20.0**	4.0	ug/L	30		66.7	15-115			
2,4,6-Trichlorophenol	**17.9**	8.0	ug/L	30		59.8	15-110			
Surrogate: 2-Fluorobiphenyl	*20.8*		*ug/L*	*25*		*83.3*	*43-116*			
Surrogate: 2-Fluorophenol	*15.8*		*ug/L*	*50*		*31.6*	*21-100*			
Surrogate: Nitrobenzene-d5	*22.0*		*ug/L*	*25*		*87.8*	*35-134*			
Surrogate: Phenol-d6	*12.6*		*ug/L*	*50*		*25.3*	*10-94*			
Surrogate: 2,4,6-Tribromophenol	*22.6*		*ug/L*	*50*		*45.2*	*10-123*			
LCS Dup (B4E2810-BSD1)				Prepared & Analyzed: 05/28/14						
Acenaphthene	**21.0**	3.0	ug/L	30		70.1	20-93	25.2	30	
Anthracene	**21.8**	3.0	ug/L	30		72.6	41-121	28.4	30	
Benzo(a)pyrene	**21.0**	3.0	ug/L	30		70.0	17-163	27.7	30	
Benzo(b)fluoranthene	**20.5**	4.0	ug/L	30		68.4	33-137	31.2	30	
Butyl benzyl phthalate	**24.2**	6.0	ug/L	30		80.7	19-139	27.9	30	
4-Chloro-3-methylphenol	**18.2**	8.0	ug/L	30		60.8	22-147	15.2	30	
Bis(2-chloroethyl)ether	**21.5**	4.0	ug/L	30		71.7	26-122	25.2	30	
2-Chloronaphthalene	**18.2**	5.0	ug/L	30		60.7	15-105	26.4	30	
4-Chlorophenyl phenyl ether	**18.2**	3.0	ug/L	30		60.5	41-128	19.4	30	
1,4-Dichlorobenzene	**17.3**	3.0	ug/L	30		57.6	26-105	7.52	30	
2,4-Dichlorophenol	**14.9**	5.0	ug/L	30		49.7	15-110	9.34	30	
Di-n-octyl phthalate	**24.6**	7.0	ug/L	30		81.9	4-146	25.3	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B4E2810 - EPA 3510C_MS										
LCS Dup (B4E2810-BSD1) Continued				Prepared & Analyzed: 05/28/14						
Bis(2-ethylhexyl)phthalate	**25.9**	19	ug/L	30		86.3	20-210	25.8	30	J
Fluoranthene	**20.3**	4.0	ug/L	30		67.6	47-125	24.7	30	
Fluorene	**17.9**	3.0	ug/L	30		59.7	27-93	4.90	30	
Hexachlorobenzene	**26.3**	7.0	ug/L	30		87.7	2-152	13.9	30	
Hexachlorobutadiene	**15.0**	8.0	ug/L	30		50.1	24-116	13.9	30	
Hexachloroethane	**17.8**	3.0	ug/L	30		59.3	11-97	1.01	30	
Isophorone	**22.0**	4.0	ug/L	30		73.5	21-196	27.2	30	
Naphthalene	**19.6**	4.0	ug/L	30		65.4	25-121	17.7	30	
Nitrobenzene	**18.0**	5.0	ug/L	30		60.1	38-133	39.1	30	
2-Nitrophenol	**15.5**	6.0	ug/L	30		51.6	2-163	26.3	30	
N-Nitrosodi-n-propylamine	**23.8**	6.0	ug/L	30		79.3	2-230	15.5	30	
Pentachlorophenol	**ND**	17	ug/L	30			14-176		30	
Phenol	**8.01**	3.0	ug/L	30		26.7	5-112	19.1	30	
Pyrene	**23.4**	3.0	ug/L	30		77.9	13-111	29.3	30	
1,2,4-Trichlorobenzene	**16.2**	4.0	ug/L	30		54.0	15-115	21.1	30	
2,4,6-Trichlorophenol	**14.6**	8.0	ug/L	30		48.8	15-110	20.3	30	
Surrogate: 2-Fluorobiphenyl	*19.5*		*ug/L*	*25*		*78.0*	*43-116*			
Surrogate: 2-Fluorophenol	*23.1*		*ug/L*	*50*		*46.2*	*21-100*			
Surrogate: Nitrobenzene-d5	*16.7*		*ug/L*	*25*		*66.8*	*35-134*			
Surrogate: Phenol-d6	*12.8*		*ug/L*	*50*		*25.5*	*10-94*			
Surrogate: Terphenyl-dl4	*19.6*		*ug/L*	*25*		*78.4*	*33-141*			
Surrogate: 2,4,6-Tribromophenol	*21.7*		*ug/L*	*50*		*43.4*	*10-123*			
Anions by Ion Chromatography - Quality Control										
Batch B4E2308 - NO PREP										
Blank (B4E2308-BLK1)				Prepared & Analyzed: 05/22/14						
Nitrite as N	<0.25	0.25	mg/L							
Nitrate as N	<0.050	0.050	mg/L							
LCS (B4E2308-BS1)				Prepared: 05/22/14 Analyzed: 05/23/14						
Nitrate as N	**4.55**	0.050	mg/L	5.0		91.0	90-110			
Nitrite as N	**5.27**	0.25	mg/L	5.0		105	90-110			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Anions by Ion Chromatography - Quality Control										
Batch B4E2308 - NO PREP										
LCS (B4E2308-BS2)				Prepared & Analyzed: 05/23/14						
Nitrate as N	**4.80**	0.050	mg/L	5.0		96.0	90-110			
Nitrite as N	**5.27**	0.25	mg/L	5.0		105	90-110			
LCS (B4E2308-BS3)				Prepared: 05/30/14 Analyzed: 06/09/14						
Nitrite as N	**5.14**	0.25	mg/L	5.0		103	90-110			
Nitrate as N	**4.94**	0.050	mg/L	5.0		98.7	90-110			
LCS Dup (B4E2308-BSD1)				Prepared: 05/22/14 Analyzed: 05/23/14						
Nitrate as N	**5.44**	0.050	mg/L	5.0		109	90-110	17.8	20	
Nitrite as N	**5.16**	0.25	mg/L	5.0		103	90-110	2.07	30	
LCS Dup (B4E2308-BSD2)				Prepared & Analyzed: 05/23/14						
Nitrate as N	**4.70**	0.050	mg/L	5.0		94.1	90-110	2.08	20	
Nitrite as N	**4.97**	0.25	mg/L	5.0		99.4	90-110	5.76	30	
LCS Dup (B4E2308-BSD3)				Prepared & Analyzed: 05/30/14						
Nitrate as N	**5.02**	0.050	mg/L	5.0		100	90-110	1.61	20	
Nitrite as N	**5.46**	0.25	mg/L	5.0		109	90-110	5.96	30	
Matrix Spike (B4E2308-MS1)		**Source: 4E22010-01**		Prepared & Analyzed: 05/23/14						
Nitrate as N	**15.0**	0.50	mg/L	10	3.90	111	80-120			
Nitrite as N	**11.9**	2.5	mg/L	10		119	80-120			
Matrix Spike Dup (B4E2308-MSD1)		**Source: 4E22010-01**		Prepared & Analyzed: 05/22/14						
Nitrite as N	**11.7**	2.5	mg/L	10		117	80-120	1.44	40	
Nitrate as N	**15.2**	0.50	mg/L	10	3.90	113	80-120	1.46	30	
Batch B4E2920 - NO PREP										
Blank (B4E2920-BLK1)				Prepared & Analyzed: 05/23/14						
Ortho-phosphate	<0.070	0.070	mg/L							
LCS (B4E2920-BS1)				Prepared & Analyzed: 05/23/14						
Ortho-phosphate	**4.99**	0.070	mg/L	5.0		99.9	90-110			
LCS Dup (B4E2920-BSD1)				Prepared: 05/23/14 Analyzed: 06/09/14						
Ortho-phosphate	**4.51**	0.070	mg/L	5.0		90.3	90-110	10.1	20	
Matrix Spike (B4E2920-MS1)		**Source: 4E22017-03**		Prepared & Analyzed: 05/23/14						
Ortho-phosphate	**4.56**	0.070	mg/L	5.0	<2.5	91.2	80-120			
Matrix Spike Dup (B4E2920-MSD1)		**Source: 4E22017-03**		Prepared & Analyzed: 05/23/14						

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Anions by Ion Chromatography - Quality Control										
Batch B4E2920 - NO PREP										
Matrix Spike Dup (B4E2920-MSD1) Continued				**Source: 4E22017-03**		Prepared & Analyzed: 05/23/14				
Ortho-phosphate	**4.61**	0.070	mg/L	5.0	<2.5	92.2	80-120	1.05	30	
Batch B4E3013 - NO PREP										
Blank (B4E3013-BLK1)						Prepared: 05/23/14 Analyzed: 05/30/14				
Chloride	<0.34	0.34	mg/L							
Sulfate	<0.50	0.50	mg/L							
LCS (B4E3013-BS1)						Prepared & Analyzed: 05/23/14				
Sulfate	**4.90**	0.50	mg/L	5.0		98.0	90-110			
Chloride	**5.40**	0.34	mg/L	5.0		108	90-110		30	
LCS (B4E3013-BS2)						Prepared & Analyzed: 05/30/14				
Sulfate	**5.46**	0.50	mg/L	5.0		109	90-110			
Chloride	**5.12**	0.34	mg/L	5.0		102	90-110		30	
LCS (B4E3013-BS3)						Prepared & Analyzed: 06/02/14				
Chloride	**4.85**	0.34	mg/L	5.0		96.9	90-110		30	
Sulfate	**5.35**	0.50	mg/L	5.0		107	90-110			
LCS Dup (B4E3013-BSD1)						Prepared & Analyzed: 05/23/14				
Sulfate	**5.08**	0.50	mg/L	5.0		102	90-110	3.61	20	
Chloride	**4.65**	0.34	mg/L	5.0		93.0	90-110	14.9	30	
LCS Dup (B4E3013-BSD2)						Prepared & Analyzed: 05/30/14				
Chloride	**4.66**	0.34	mg/L	5.0		93.1	90-110	9.59	30	
Sulfate	**4.78**	0.50	mg/L	5.0		95.7	90-110	13.1	20	
LCS Dup (B4E3013-BSD3)						Prepared & Analyzed: 06/02/14				
Chloride	**4.74**	0.34	mg/L	5.0		94.9	90-110	2.17	30	
Sulfate	**5.23**	0.50	mg/L	5.0		105	90-110	2.38	20	
General Chemistry Analyses - Quality Control										
Batch B4E2328 - NO PREP										
Duplicate (B4E2328-DUP1)				**Source: 4E22017-01**		Prepared & Analyzed: 05/23/14				
pH	**6.90**	0.010	pH Units		6.95			0.722	20	
Batch B4E2913 - NO PREP										
Blank (B4E2913-BLK1)						Prepared & Analyzed: 05/29/14				

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
General Chemistry Analyses - Quality Control										
Batch B4E2913 - NO PREP										
Chemical Oxygen Demand	<7.0	7.0	mg/L							
LCS (B4E2913-BS1)				Prepared & Analyzed: 05/29/14						
Chemical Oxygen Demand	**56.0**	7.0	mg/L	50		112	80-120			
LCS Dup (B4E2913-BSD1)				Prepared & Analyzed: 05/29/14						
Chemical Oxygen Demand	**53.0**	7.0	mg/L	50		106	80-120	5.58	20	
Duplicate (B4E2913-DUP1)			**Source: 4E22017-04**	Prepared & Analyzed: 05/29/14						
Chemical Oxygen Demand	**25.2**	7.0	mg/L		22.4			11.8	20	
Batch B4E2915 - NO PREP										
Blank (B4E2915-BLK1)				Prepared & Analyzed: 05/22/14						
Ammonia as N	<0.031	0.031	mg/L							
LCS (B4E2915-BS1)				Prepared & Analyzed: 05/22/14						
Ammonia as N	**1.13**	0.031	mg/L	1.0		113	80-120		20	
LCS Dup (B4E2915-BSD1)				Prepared & Analyzed: 05/22/14						
Ammonia as N	**1.20**	0.031	mg/L	1.0		120	80-120	6.01	20	
Duplicate (B4E2915-DUP1)			**Source: 4E22017-01**	Prepared & Analyzed: 05/22/14						
Ammonia as N	**<0.031**	0.031	mg/L		<0.10				30	
Batch B4E2916 - NO PREP										
Blank (B4E2916-BLK1)				Prepared & Analyzed: 05/22/14						
Specific Conductance (EC)	<10	10	umhos/cm							
Batch B4E2921 - NO PREP										
Blank (B4E2921-BLK1)				Prepared & Analyzed: 05/28/14						
Total Dissolved Solids	<6.2	6.2	mg/L							
LCS (B4E2921-BS1)				Prepared & Analyzed: 05/28/14						
Total Dissolved Solids	**55.0**	6.2	mg/L	50		110	80-120			
LCS Dup (B4E2921-BSD1)				Prepared & Analyzed: 05/28/14						
Total Dissolved Solids	**52.0**	6.2	mg/L	50		104	80-120	5.61	25	
Duplicate (B4E2921-DUP1)			**Source: 4E22010-01**	Prepared & Analyzed: 05/28/14						
Total Dissolved Solids	**1100**	31	mg/L		1020			7.06	20	
GROBTEXMTBE 8015M/8021B by GC - Quality Control										
Batch B4E2907 - EPA 5030B										

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
GROBTEXMTBE 8015M/8021B by GC - Quality Control										
Batch B4E2907 - EPA 5030B										
Blank (B4E2907-BLK1)				Prepared & Analyzed: 05/29/14						
Benzene	<0.40	0.40	ug/L							
Ethylbenzene	<0.50	0.50	ug/L							
Gasoline Range Organics (GRO)	<17	17	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<3.0	3.0	ug/L							
Toluene	<0.40	0.40	ug/L							
Xylenes, Total	<0.80	0.80	ug/L							
Surrogate: a,a,a-Trifluorotoluene	*51.3*		*ug/L*	*50*		*103*	*80-120*			
LCS (B4E2907-BS1)				Prepared & Analyzed: 05/29/14						
Benzene	**20.6**	0.40	ug/L	20		103	75-125			
Ethylbenzene	**22.1**	0.50	ug/L	20		110	75-125			
Gasoline Range Organics (GRO)	**581**	17	ug/L	500		116	75-125			
Methyl-tert-Butyl Ether (MTBE)	**101**	3.0	ug/L	100		101	75-125			
Toluene	**20.4**	0.40	ug/L	20		102	75-125			
Surrogate: a,a,a-Trifluorotoluene	*55.2*		*ug/L*	*50*		*110*	*80-120*			
LCS Dup (B4E2907-BSD1)				Prepared & Analyzed: 05/29/14						
Benzene	**20.5**	0.40	ug/L	20		102	75-125	0.285	30	
Ethylbenzene	**22.2**	0.50	ug/L	20		111	75-125	0.662	30	
Gasoline Range Organics (GRO)	**558**	17	ug/L	500		112	75-125	4.09	30	
Methyl-tert-Butyl Ether (MTBE)	**103**	3.0	ug/L	100		103	75-125	2.09	30	
Toluene	**20.3**	0.40	ug/L	20		101	75-125	0.707	30	
Surrogate: a,a,a-Trifluorotoluene	*51.0*		*ug/L*	*50*		*102*	*80-120*			
Matrix Spike (B4E2907-MS1)			**Source: 4E22017-01**	Prepared & Analyzed: 05/29/14						
Benzene	**19.8**	0.40	ug/L	20	<0.50	99.2	70-130			
Ethylbenzene	**21.8**	0.50	ug/L	20	<0.50	109	70-130			
Gasoline Range Organics (GRO)	**616**	17	ug/L	500	<100	123	70-130			
Methyl-tert-Butyl Ether (MTBE)	**86.9**	3.0	ug/L	100	<5.0	86.9	70-130			
Toluene	**20.2**	0.40	ug/L	20	<0.50	101	70-130			
Surrogate: a,a,a-Trifluorotoluene	*55.9*		*ug/L*	*50*		*112*	*80-120*			
Matrix Spike Dup (B4E2907-MSD1)			**Source: 4E22017-01**	Prepared & Analyzed: 05/29/14						
Benzene	**20.1**	0.40	ug/L	20	<0.50	101	70-130	1.44	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
GROBTEXMTBE 8015M/8021B by GC - Quality Control										
Batch B4E2907 - EPA 5030B										
Matrix Spike Dup (B4E2907-MSD1) Continued				**Source: 4E22017-01**	Prepared & Analyzed: 05/29/14					
Ethylbenzene	**22.1**	0.50	ug/L	20	<0.50	111	70-130	1.77	30	
Gasoline Range Organics (GRO)	**601**	17	ug/L	500	<100	120	70-130	2.61	30	
Methyl-tert-Butyl Ether (MTBE)	**107**	3.0	ug/L	100	<5.0	107	70-130	20.6	30	
Toluene	**20.4**	0.40	ug/L	20	<0.50	102	70-130	0.737	30	
Surrogate: a,a,a-Trifluorotoluene	*56.1*		*ug/L*	*50*		*112*	*80-120*			
Carbon Chain by GC/FID - Quality Control										
Batch B4E2717 - EPA 3510C										
Blank (B4E2717-BLK1)					Prepared & Analyzed: 05/27/14					
C6-C8	<0.010	0.010	mg/L							
C8-C10	<0.010	0.010	mg/L							
C10-C12	<0.010	0.010	mg/L							
C12-C14	<0.010	0.010	mg/L							
C14-C16	<0.010	0.010	mg/L							
C16-C18	<0.010	0.010	mg/L							
C18-C20	<0.010	0.010	mg/L							
C20-C22	<0.010	0.010	mg/L							
C22-C24	<0.010	0.010	mg/L							
C24-C26	<0.010	0.010	mg/L							
C26-C28	<0.010	0.010	mg/L							
C28-C32	<0.010	0.010	mg/L							
C32-C34	<0.010	0.010	mg/L							
C34-C36	<0.010	0.010	mg/L							
C36-C40	<0.010	0.010	mg/L							
C40-C44	<0.010	0.010	mg/L							
TPH (C6-C44)	<0.10	0.10	mg/L							
Diesel Range Organics (C13-C22)	<0.10	0.10	mg/L							
Gasoline Range Organics (C6-C12)	<0.10	0.10	mg/L							
Oil Range Organics (C23-C44)	<0.10	0.10	mg/L							
Surrogate: o-Terphenyl	*0.0698*		*mg/L*	*0.050*		*140*	*50-150*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B4E2717 - EPA 3510C										
LCS (B4E2717-BS1)				Prepared & Analyzed: 05/27/14						
Diesel Range Organics as Diesel	**0.835**	0.10	mg/L	1.0		83.5	75-125			
Surrogate: o-Terphenyl	*0.0608*		*mg/L*	*0.050*		*122*	*50-150*			
LCS Dup (B4E2717-BSD1)				Prepared & Analyzed: 05/27/14						
Diesel Range Organics as Diesel	**0.898**	0.10	mg/L	1.0		89.8	75-125	7.30	30	
Surrogate: o-Terphenyl	*0.0620*		*mg/L*	*0.050*		*124*	*50-150*			
Carbon Chain by GC/FID Silica Gel Cleanup - Quality Control										
Batch B4E2923 - EPA 3510C										
Blank (B4E2923-BLK1)				Prepared: 05/29/14 Analyzed: 05/30/14						
C6-C8	<0.010	0.010	mg/L							
C8-C10	<0.010	0.010	mg/L							
C10-C12	<0.010	0.010	mg/L							
C12-C14	<0.010	0.010	mg/L							
C14-C16	<0.010	0.010	mg/L							
C16-C18	<0.010	0.010	mg/L							
C18-C20	<0.010	0.010	mg/L							
C20-C22	<0.010	0.010	mg/L							
C22-C24	<0.010	0.010	mg/L							
C24-C26	<0.010	0.010	mg/L							
C26-C28	<0.010	0.010	mg/L							
C28-C32	<0.010	0.010	mg/L							
C32-C34	<0.010	0.010	mg/L							
C34-C36	<0.010	0.010	mg/L							
C36-C40	<0.010	0.010	mg/L							
C40-C44	<0.010	0.010	mg/L							
TPH (C6-C44)	<0.10	0.10	mg/L							
Diesel Range Organics (C13-C22)	<0.10	0.10	mg/L							
Gasoline Range Organics (C6-C12)	<0.10	0.10	mg/L							
Oil Range Organics (C23-C44)	<0.10	0.10	mg/L							
Surrogate: o-Terphenyl	*0.0736*		*mg/L*	*0.050*		*147*	*50-150*			
LCS (B4E2923-BS1)				Prepared: 05/29/14 Analyzed: 05/30/14						

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID Silica Gel Cleanup - Quality Control										
Batch B4E2923 - EPA 3510C										
LCS (B4E2923-BS1) Continued				Prepared: 05/29/14 Analyzed: 05/30/14						
Diesel Range Organics as Diesel	**0.969**	0.10	mg/L	1.0		96.9	75-125			
Surrogate: o-Terphenyl	*0.0694*		*mg/L*	*0.050*		*139*	*50-150*			
LCS Dup (B4E2923-BSD1)				Prepared: 05/29/14 Analyzed: 05/30/14						
Diesel Range Organics as Diesel	**0.936**	0.10	mg/L	1.0		93.6	75-125	3.47	30	
Surrogate: o-Terphenyl	*0.0653*		*mg/L*	*0.050*		*131*	*50-150*			
Total Metals by EPA 6010B - Quality Control										
Batch B4E2813 - EPA 3010A										
Blank (B4E2813-BLK1)				Prepared & Analyzed: 05/28/14						
Arsenic	<6.0	6.0	ug/L							
Barium	<5.0	5.0	ug/L							
Boron	<50	50	ug/L							
Chromium	<9.0	9.0	ug/L							
Cobalt	<5.0	5.0	ug/L							
Copper	<10	10	ug/L							
Lead	<5.0	5.0	ug/L							
Sodium	<100	100	ug/L							
Zinc	<10	10	ug/L							
LCS (B4E2813-BS1)				Prepared & Analyzed: 05/28/14						
Arsenic	**210**	6.0	ug/L	200		105	80-120		20	
Barium	**208**	5.0	ug/L	200		104	80-120		20	
Boron	**204**	50	ug/L	200		102	80-120		20	
Chromium	**218**	9.0	ug/L	200		109	80-120		20	
Cobalt	**217**	5.0	ug/L	200		108	80-120		20	
Copper	**216**	10	ug/L	200		108	80-120		20	
Lead	**215**	5.0	ug/L	200		108	80-120		20	
Sodium	**206**	100	ug/L	200		103	80-120		20	J
Zinc	**216**	10	ug/L	200		108	80-120		20	
LCS Dup (B4E2813-BSD1)				Prepared & Analyzed: 05/28/14						
Arsenic	**216**	6.0	ug/L	200		108	80-120	2.72	20	
Barium	**220**	5.0	ug/L	200		110	80-120	5.32	20	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Cardno Entrix
Project No: 6086104
Project Name: FM O&G - Inglewood (GW-RWQCB)

AA Project No: A783164
Date Received: 05/22/14
Date Reported: 06/11/14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by EPA 6010B - Quality Control										
Batch B4E2813 - EPA 3010A										
LCS Dup (B4E2813-BSD1) Continued				Prepared & Analyzed: 05/28/14						
Boron	**216**	50	ug/L	200		108	80-120	6.00	20	
Chromium	**225**	9.0	ug/L	200		113	80-120	3.43	20	
Cobalt	**227**	5.0	ug/L	200		113	80-120	4.51	20	
Copper	**226**	10	ug/L	200		113	80-120	4.39	20	
Lead	**225**	5.0	ug/L	200		112	80-120	4.27	20	
Sodium	**206**	100	ug/L	200		103	80-120	0.388	20	J
Zinc	**225**	10	ug/L	200		112	80-120	3.99	20	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	Cardno Entrix	**AA Project No:**	A783164
Project No:	6086104	**Date Received:**	05/22/14
Project Name:	FM O&G - Inglewood (GW-RWQCB)	**Date Reported:**	06/11/14

Special Notes

J : Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

[1] = **S-GC** : Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate(s).

Viorel Vasile
Operations Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 19890
70039300
Page 1 of 1

Client: Cardno ENTRIX	**Project Name / No.:** FM 0+6 Inglewood (RWQCB)	**Sampler's Name:** Chris Olsen	
Project Manager: J. Campbell	**Site Address:**	**Sampler's Signature:**	
Phone:	**City:**	**P.O. No.:**	
Fax:	**State & Zip:**	**Quote No.:**	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	pH	TpH-g (5,4,0)	TpH-d w/ silica gel	TDS	Ammonia	Ortho-Phosphate	Chloride	Sulfate	Additional *	Special Instructions
MW-6	4E22017-01	5/22/14	1100	H_2O		X	X	X	X	X	X	X	X	X	X	* Nitrate
MW-7	-02	5/22/14	1230	↓		X	X	X	X	X	X	X	X	X	X	Nitrite
MW-8	-03	5/22/14	0930	↓		X	X	X	X	X	X	X	X	X	X	Lead
MW-9	-04	5/22/14	1400	H_2O		X	X	X	X	X	X	X	X	X	X	Boron
																Arsenic
																Barium
																Chromium
																Cobalt
																Copper
																Zinc
																VOC (8020)
																SVOC (8270)
																EC
																COD - chemical oxygen demand
																MTBE

For Laboratory Use

PRIORITY
Rush ___ Hrs SH ✓
Date 5/22/14 Time 1695 Sign

A.A. Project No.: A783164 / 4E22017

Relinquished by	Date	Time	Received by
	5/22/14	1600	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project.
Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the completion of this project.